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HISTORY

OF THE

BIRDS OF EUROPE,

NOT OBSERVED IN THE BRITISH ISLES.

BY CHARLES ROBERT BREE, ESQ., M.D.

VOL. III.

LONDON:
GROOMBRIDGE AND SONS, PATERNOSTER ROW.
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ERRATA.

Page 60, in head line, for "Yellow-headed Bunting," read "Yellow-breasted Bunting."

Page 163, second paragraph, dele "by Mr. Taylor (ibid, p. 47,) as very abundant in small flocks in Egypt."

TO THE BINDER.

The Binder is requested to cancel Sheet 2 A, and insert the one here given.

SOMBRE TIT.

BIRDS OF EUROPE,

NOT OBSERVED IN THE BRITISH ISLES.

GRANIVORÆ.

Family PARIDÆ. (Bonaparte.)

Genus PARUS. *(Linnæus.)*

Generic Characters.—Beak short, straight, strong, conical, and compressed; edges sharp and pointed, the base furnished with a few stiff hairs; nostrils basal, round, and covered with reflected bristly feathers. Feet short, with three toes in front and one behind, entirely divided to their origin; hind toe the strongest, and armed with a long hooked claw. Wings, the first primary very short, the second much shorter than the third, the fourth, fifth, and sixth about equal in length, and the longest in the wing.

SOMBRE TIT.

Parus lugubris.

Parus lugubris,	Natterer. Temminck.
" "	Bonaparte, 1838.
" "	Schinz. Schlegel.
Pœcilia lugubris,	Kaup. Bonaparte, 1850.
Mésange lugubre,	Of the French.
Trauermeise,	Of the Germans.

Specific Characters.—Top of the head, nape, and throat brownish black, separated by a broad white band extending from the gape to the nape, and increasing in width from before backwards. Length five inches and three-tenths; carpus to tip of wing three inches; tail two inches and a half; beak from gape three-fifths of an inch; tarsus nine-tenths of an inch.

The Tits are a very well-marked family. In disposition of colours, in form, and habit, they very much resemble each other, in whatever part of the world they are found; and yet almost every species is, by some author or other, placed in a separate genus. Thus in the present family we have the original genus of Linnæus, *Parus;* then we have Leach separating those with long tails into the genus *Mecistura*, and those with a beard into that of *Calamophilus*. Not satisfied with this innovation, Boie calls the last genus *Mystacinus*, and Vigors places the Little Penduline Titmouse, which I shall figure and describe by and bye, in the genus *Ægithalus;* while Brehm places the same bird in a genus created for its especial use, that of *Pendulinus*. Then we find that great innovator, Kaup, placing the Crested Tit in the genus *Lophophanes*, and the Marsh, Sombre, and Siberian Tits in the genus *Pœcilia*, while for the Azure Tit he creates the genus *Cyanistes*, in all of which he is followed by Bonaparte.

This uncertainty arises no doubt from the different conceptions by naturalists of what really constitutes a genus. As I believe, with Agassiz, that genera are natural groups of a peculiar kind, separated from each other by ultimate details of structure, I shall consider the family of Tits as coming within this definition, and therefore as belonging to one genus only. It is remarkable how modern naturalists have lost sight of the *thoughts*, by which (it is clear, as pointed out by

Agassiz,) our old classifiers were influenced in the formation of orders and genera; the consequence of this is that every few years we have a new nomenclature, founded on the assumption that the previous one was based upon erroneous data.

Upon this all-important subject the reader will find some excellent and judicious remarks in a paper by Mr. Stimpson, quoted from Silliman's "Journal," in the "Edinburgh New Philosophical Journal" for October, 1860. I will only here make one extract:—"The restoration by G. R. Gray, of Boddaert's names in ornithology is another instance. By the discovery of a meagre pamphlet of the eighteenth century, only two or three copies of which now exist, we find ourselves forced to change the generic names of common birds, familiar as they are by long and constant usage."

I shall have another opportunity, more appropriate than this, of enlarging upon this subject, in which I shall be able to shew that the Prince of Canino has changed the generic name of some birds twice or even three times, without in any case adding either precision or utility to the science. I sincerely hope that British ornithologists at least, will do all in their power to put an end to a system which merely encumbers our literature with useless verbiage.

The Sombre Tit is an inhabitant of Dalmatia, Hungary, Greece, and Russia. According to De Selys, it also occurs in Switzerland. Temminck says that it is never found in Austria, or in fact in any part of Germany.

In the distribution of colours about the head and neck this bird is very similar to *Parus Sibiricus*, with which it has been indeed considered identical by Keyserling and Blasius, without, however, I think,

either due consideration, or comparison of specimens. *P. lugubris* is altogether a larger bird, the beak and tarsi are stronger and larger; and while the abdomen is white and the back grey brown in *lugubris*, the former is russet, and the latter mottled with russet and black in *Sibiricus*. A reference to the two figures will render this quite clear.

Temminck says it is easy to confound the Sombre Tit with the Nonette or Marsh Tit; but it is quite certain that he referred to the *Parus atricapillus* of Gmelin, which is a North American bird, altogether differing from our well-known Marsh Tit, with which the present species can in no way be confounded.

Count Mühle, who has recorded the occurrence and detailed the habits of this bird in Greece, says that its habits are different from the other members of the family. It arrives in the Morea, where it appears to be a summer visitor, at the end of April or beginning of May, and locates itself in the little mountain valleys, where it lives solitarily, frequenting the wild-fruit trees, and never being found upon the more lofty ones. Each bird takes up its own territory, and is observed on the same resting-place frequently during the day. They are very unsociable and shy on the appearance of man, and seem to know if they are followed, and consequently are difficult to shoot. Count Mühle did not observe them after September, and was altogether unacquainted with their nidification, the only egg he procured being an imperfect and uncoloured one which was found in a female shot in the spring.

The adult male in breeding plumage has the top of the head and throat dark blackish brown, the rest of the upper plumage bright hair brown; cheeks, chest, abdomen, and under tail coverts white, with the

flanks mottled with bluish black; the white patch on the cheeks extends to the upper scapularies. Beak, feet, and iris, brown.

My figure is taken from an adult male kindly sent me by Mr. Tristram. The figure of the egg is taken from Thienemann.

The bird is also figured by Michahelles, in Sturm, Deutschlands Fauna, heft. 2, tab. 1; Gould, Birds of Europe, pl. 151, fig. 1.

GRANIVORÆ.

Family PARIDÆ. (Bonaparte.)

Genus PARUS. *(Linnæus.)*

SIBERIAN TIT.

Parus Sibiricus.

Parus Sibiricus,	GMELIN AND AUTHORS.
Pœcilia Sibirica,	KAUP. BONAPARTE.
Mésange de Siberie,	OF THE FRENCH.
Sibirische Meise,	OF THE GERMANS.

Specific Characters.—Throat black; top of head brown; chest and abdomen russet. Length four inches and nine-tenths; carpus to tip two inches and a half; tail two inches and a half; beak two-fifths of an inch; tarsus three-fifths of an inch.

THE Siberian Tit, as its name implies, is a northern species, being found only in the boreal regions of Europe and Asia, visiting, during winter, some of the provinces of Russia. It also inhabits Lapland, where it was discovered nesting by the late much lamented John Wolley. According to this gentleman it is the only species which breeds in the Muonioniska district of Finnish Lapland. In his catalogue for 1858, four eggs are inserted as having been obtained at Mokhajerri, from a nest made with the hairs of mice. Mr. Wolley remarks that *P. borealis* is seldom seen in Lapland,

and that he doubts if it ever breeds in the far north. In the catalogue for 1860 five eggs are inserted, taken also in Finnish Lapland. It is also included in the Scandinavian Fauna by Nillson. M. Linden, the conservator of the Museum of Geneva, states that this bird is also found in the Swiss Alps; but M. De Selys-Longchamps is of opinion that he mistook *P. lugubris* for it.

I am indebted to Mr. Newton for the following interesting details of this bird:—"My own opportunities of observing *Parus Sibiricus* were not sufficient to enable me to say in what particulars (if in any) its habits differ from those of the other species of the genus with which I am acquainted, beyond the fact that its call-notes are easily recognisable as distinct from anything else. Indeed from the information I have at various times received from the late Mr. John Wolley, I should suppose that in manners it closely resembles the rest of the Titmice. It is resident throughout the year in the district around Muonioniska, and as he has often assured me, was the only species which he found to breed there, although in autumn the Marsh Titmouse makes its appearance, and on one occasion, a solitary Great Titmouse was obtained by him. I am unable to give even an outline of the range of *Parus Sibiricus* in Lapland; but I do not remember seeing it until, in descending the river Muonio, we had entered the region of the Scotch fir, *(Pinus sylvestris.)* I never found a nest myself, or saw one *in situ*. It breeds in holes of trees, whether naturally formed by decay, or excavated by Woodpeckers. The nest is a mass of hair, principally from the lemming, or some of the voles, but occasionally from the alpine hare, mixed with a little green moss, black

fibrous lichen, and willow down. Seven appears to be the usual complement of eggs, but eight, and even nine are sometimes laid. This Titmouse seems to pay as little regard to the rights of priority as some ornithologists do, for several instances occurred to Mr. Wolley's knowledge, of its dispossessing the Common Redstart from a convenient hole in which the latter bird had begun its nest. The ordinary cry of *Parus Sibiricus* is perhaps best expressed by the words 'Pistéé-téé,' pronounced in a hissing tone, and from this cry the bird gets its Finnish name. By those of the people who are inclined to superstition it is regarded as a bird of bad omen, and the squirrel-shooter or bear-hunter looks forward to a luckless expedition if in starting in the morning, he is greeted by the notes of the busy little Pistee-tianen.

Specimens of the Marsh Titmouse from the north of Europe undoubtedly differ somewhat (as is the case with so many other species) from those obtained in the British Islands, by having the colours more strongly contrasted. The northern race has been described by M. De Selys-Longchamps, as distinct, under the name of *Parus borealis,* (Bulletins de l' Acad. Roy. de Bruxelles, tome x, No. 7). I have, thanks to that gentleman, lately had the advantage of comparing his type specimens with examples from Mr. Wolley's collection, and can safely say that they are in all respects identical. At the same time I must express my belief that the differences between them and our common *P. palustris* are not such as I can consider specific; and if I am not mistaken, M. De Selys himself is now of the same opinion. I feel assured that that talented naturalist was wrongly informed as to the locality whence his types were obtained. It was doubtless from

some part of the Scandinavian continent, and not from Iceland, where no Titmouse is found, that they were brought by the French Northern Scientific Exhibition."

The adult male in breeding plumage has the top of the head and nape dusky brown; the back and upper wing coverts russet brown, mottled with black. Wings and tail dark hair brown. The throat is black, and between it and the top of the head is a broad patch of pure white, extending from the gape to the scapularies, and increasing in width from before backwards. All the rest of the under parts are russet, lighter on the crop, and verging into grey where it joins the black of the throat. Wings and tail underneath slate brown; beak black; feet lead grey; iris dark brown.

The female is rather smaller than the male, having the top of the head and throat of a greyish brown tinged with russet. The young before the first moult are much less russet-coloured above, and of a brown tint, the black feathers of the throat being bordered with grey.

I am indebted for the male specimen figured to the kindness of Mr. Tristram. The egg is from a specimen kindly sent me by Mr. Alfred Newton, and its authenticity, I need not say, may be entirely relied upon.

The Siberian Tit has also been figured by Temminck and Laugier, in the Atlas to the Manual, with the remark of the author, that the russet colour of the flanks is deficient, and that of the abdomen and inferior coverts too deep. The tail ought to have been a trifle longer, and more tapering. Buffon, pl. enlum 708, fig. 3; Gould, Birds of Europe. pl. 151, fig. 2.

GRANIVORÆ.

Family PARIDÆ. (Bonaparte.)

Genus PARUS. *(Linnæus.)*

AZURE TIT.

Parus cyanus.

Parus cyanus,	PALLAS; Nov. Comm. Acad. Peterop., v. 14, p. 588, pl. 23, fig. 3.
" "	GMELIN. TEMMINCK.
" *cyaneus,*	SCHLEGEL. FALCK; Vog., v. 3, p. 407, pl. 31.
" *cæruleus major,*	BRISSON.
" *sæbyensis,*	SPARRM; Mus. Carl., pl. 25.
" *knjæsciok,*	GMELIN; Syst.
" "	LATHAM; Ind., v. 2, p. 572.
" "	LEPECH; Voy., vol. i, p. 180.
Cyanistes cyanus,	KAUP. BONAPARTE.
Mesange azurée,	
La Grosse Mésange bleue,	OF THE FRENCH.
Lasurmeise,	OF THE GERMANS.

Specific Characters.—All the inferior parts pure white, with a brilliant blue patch on the middle of the abdomen. Length five inches and a half.

THE Azure Tit, perhaps the most beautiful of the European *Paridæ,* is an inhabitant of the north of Europe and Asia. It is very common in Siberia and the

J. Z. del. et lith. TIT.

adjacent parts of the Russian dominions, extending in winter through the greatest part of European Russia, being found at St. Petersburg, as well as on the banks of the Wolga, and sometimes ranging from thence into Poland and Prussia. According to Naumann, it is more frequently found in Sweden than in the north of Germany. An occasional specimen may be sometimes found in Saxony, or even in Austria, but it does not occur further to the south or west.

In the beginning of autumn it migrates into warmer latitudes, as in winter or early spring, an occasional pair, or single bird only, will be found in the north-west.

Naumann, who is almost the only author from whom we can glean anything about the habits of this bird, says that it does not appear to affect trees with pointed leaves, like the fir or pine, preferring willow bushes in meadows by the side of rivers and watery places. In winter they are found more plentifully in the neighbourhood of houses, and come even into towns. It is a lively, agile, and fearless bird, like the rest of its tribe, very skilful in climbing, and is seen, like the Blue Tit, clinging to boughs and branches. It is, however, readily distinguished from the other allied Tits by its longer tail.

Bechstein compares its call-note to that of the House Sparrow, but it is softer.

It lives on insects and their eggs, larvæ, and pupæ, which it diligently picks out from the open crevices of bark, and to get at which, like the Blue Tit, it destroys many buds, blossoms, and leaves. It is also fond of seeds and the kernels of nuts, upon which it may be seen hammering with its beak, having carefully fixed the object in a chink of the tree.

Naumann says that it never nests in Germany; in fact very little is known about its propagation, and I am sorry that I have not an authentic egg to figure. It breeds in the wild regions of Siberia and Eastern Russia.

The adult male has the top of the head, a large patch on the nape, the cheeks, throat, and all the inferior parts snowy white, the top of the head being shaded with azure blue, and there is a patch of the same in the middle of the abdomen. From the beak through the eyes to the nape is a band of very dark blue, which, passing round the head, enlarges at the nape, returns and forms a triangular patch on the side of the neck; back, rump, and above the wings, azure blue; greater wing coverts dark blue, the border being clearer, and terminating in white; middle tail quills azure blue, the laterals bordered and terminated with white. The tail long and cuneiform; feet and tarsi azure blue.

The female has the top of the head grey white; all the blue colours less pure, and the blue band which passes through the eyes is smaller in the nape.

Figured by Temminck and Laugier; Pallas, Nov. Comm. Acad. Peterop, pl. 23, fig. 3; Naumann, Vogel Deutsch., vol. iv, pl. 95; Gould, pl. 153.

GRANIVORÆ.

Family PARIDÆ. (Bonaparte.)

Genus PARUS. *(Linnæus.)*

PENDULINE TIT.

Parus pendulinus.

Parus pendulinus,	LINNÆUS. TEMMINCK ET AUCT.
" *narbonensis, (jun.,)*	GMELIN. LATHAM.
Ægithalus pendulinus,	VIGORS. BONAPARTE.
" "	KEYSERLING AND BLASIUS.
Mésange Remiz, La Penduline,	
La Mésange de Languedoc,	OF THE FRENCH.
Gemeine beutelmeise,	OF THE GERMANS.

Specific Characters.—Vertex and throat white; forehead black, edged with ochreous; cheeks black; back rich deep russet. Length four inches and one-fifth; carpus to tip two inches and one-tenth; beak from gape two-fifths of an inch; tarsus three-fifths of an inch; tail two inches.

THE Penduline Tit is an inhabitant of Poland, Italy, Russia, Hungary, the Crimea, and France. It is also found in some parts of Germany. Degland says he has received the nests and eggs from the neighbourhood of Pezenas; that it is found in Provence only during its migration, and accidentally in Lorraine and in the department of the Seine-Inferieure. M. Hardy has also

obtained it in the neighbourhood of Dieppe. To these localities Naumann adds, Dalmatia, Scandinavia, and Siberia; while Count Mühle tells us that it is not rarely found in the swamps of Rumelia and the Morea.

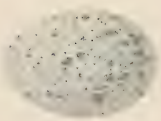
The Penduline Tit is not only one of the most prettily coloured among the family, but it is altogether a most interesting and remarkable bird. Its nest is a very elaborate structure; and all ornithologists from the time of Aldrovandi, two hundred and seventy years ago, have been eloquent and minute in their descriptions of this singular domicile, and of its ingenious and skilful architects.

A good deal of difference is, however, to be found among their descriptions, and I have therefore thought better to give at length the history of the process, as well as some of the most interesting points in the bird's economy, from two recent observers, one of whom, it will be perceived, accounts for the discrepancy in the descriptions of former naturalists.

In the "Revue et Magasin de Zoologie," for 1859, No. 3, we have the following account by M. Moquin-Tandon:—

"The Remitz or Penduline, called by various authors *Mésange de Pologne* or *de Narbonne*, and by others *Mésange des saules* or *des marais*, is without doubt one of the most remarkable of European birds. This bird displays a wonderful industry in the construction of its nest; no other species in France or Europe forms anything so elaborate and curious.

The nest of the Remitz is not cup-shaped like that of most birds, but is closed at the top more or less ovoid, and in the form of a bag or purse; on the side near the top is a small round entrance, which is prolonged into a conico-cylindrical passage, either placed



1. PENDULINE TIT.
2. BLACK-HEADED BUNTING.

horizontally or obliquely from top to bottom. It is in some respects like that of the Long-tailed Tit, but it is more delicately and skilfully built, and it is particularly distinguished from it by the manner in which it is suspended. This nest does not rest upon the branches or trunk of the tree; it is quite free, and always suspended from the upper part of the flexible branches of aspens, willows, tamarisks, and other trees or shrubs which grow on the borders of rivers or marshes. This is why some ornithologists call the Remitz, Penduline, *(Parus nidum suspendens.)*

When the nest of the Remitz is turned on one side, with the opening above, it resembles somewhat a woollen sock both in shape and material; so much so, that the peasants in the neighbourhood of Nîmes have given the bird the name of *Debassayre*, (stocking-weaver.) This little architectural *chef-d'-œuvre* is more or less lengthened according to the age and other circumstances of the bird. The most ordinary form is that of a bagpipe, of which the pipe has been shortened.

M. Requien, of Avignon, sent me from the neighbourhood of his native town a nest of this form, which is very characteristic. It was taken on the borders of the Rhone, suspended to the bough of a young aspen, by a rather long and narrow cord. It had the following dimensions:—Height seventeen cents.; transverse diameter eleven cents; length of lobby three cents. and a half; diameter of opening three cents.; thickness of edges four millemetres. It weighed fifty-five grammes. Sometimes the lobby does not exist, and the nest then takes the figure of a wallet, an egg, or a pear, nearly like that of the Long-tailed Tit.

The nest is attached and suspended with fibres of hemp, flax, nettles, stalks of grasses, and even with little

pieces of wool and the roots of couch-grass. The length of the suspending rope varies very much. M. Schintz has figured one, which was brought to me, in 1823, from the environs of St. Gilles, (Gard.) by General de Frêgeville. It was suspended to an old aspen on the borders of the lesser Rhone, by a cord four centimetres and a half long.

Guettard has figured two nests of the Penduline, the cords of both being finished by a sort of buckle which surrounds a small branch. I have never seen this sort of fastening. Those I have observed were always twisted round a bending branch, while both assisted in supporting it as well as constituted a part of its structure. Thus suspended by a flexible cord, this pretty little cradle is gently rocked above the surface of the river or marsh, where the insects upon which the Remitz feed are found in abundance. The opening of the nest always faces the marsh or river near which it is built.

The nest is composed of tufts of thistles, dandelions, viper grass, but above all the light and silken down which surrounds the catkins of willows and poplars. There is also found in it horse-hair and other animal materials, but only when vegetable substances are scarce. I had a nest from the neighbourhood of Pezenas, which was almost entirely composed of sheep's wool, and which had consequently a very strong smell of the grease of that animal.

Having brought together the materials necessary for its nest, the Remitz interlaces them, felts them, gums them together, and thus produces a sort of thick cloth, very close and firm. (It is in fact a real cloth or felt.) This tissue is strengthened with the narrow leaves of grasses, fibres, and rootlets, which sometimes stick out of the exterior. Thus the frame-work is made. One

of the nests figured by Guettard has little bits of straw sticking out, of which the greater part are worked into the texture. The Tits now arrange at the bottom of the nest a small couch formed of down, feathers, and other very soft materials. The colour of the nest is generally greyish or whitish, according to the material of which it is made. Aldrovandi and Thienemann have described nests with two openings, one before and one behind; but in all the nests I have received I have only noticed one entrance.

We have seen that the edifice of the Remitz is suspended from above; the bird first makes the cord, which he twists round a flexible branch. This cord, which is more or less long and thick, is divided into two parts, one of which goes into one side of the nest, the other into the other, and it is easy to observe how this cord will make at first two openings, one before and one behind, and one of which, as the nest advances, the birds shut up, and complete the other into a pretty little door.

The Remitz is not often seen in the north or centre of France, but frequently in the southern departments, and above all on the shores of the Rhone, Durance, Gardon Hérault, and Lez. The male and female work together, and take eighteen or twenty days to complete the nest. This activity is surprising when the perfection of the work is compared with the size and feebleness of the birds.

The Remitz lays four or five eggs, rarely six or seven. They are like those of the House Swallow, but smaller. They are rather elongated; the shell slender and dull. When just laid they are of an ivory white, and a pure white when blown. Great diameter fifteen millemetres, small diameter ten millemetres; weight when empty

six centigrammes. Bechstein and Temminck made a mistake when they described small reddish spots as distributed over the shell, like the eggs of the other Tits. The female lays twice in the year,—in April or May, and again in July or August."

The following interesting description of the nidification of the Penduline Titmouse given by M. Taczanowski, of Warsaw, is also taken from the "Revue et Magasin de Zoologie" No. 6, 1859:—

"Having had an opportunity of seeing a great number of the nests of the Remitz, and of making a collection of those variously constructed, I have been able to ascertain the way in which they are built, and to correct some mistakes which have hitherto existed, from the imperfect observations which have been made upon them.

The materials which form the foundation of these nests are the fibres of hemp, nettles, and long and slender filaments of the bark of different species of willows, which the Remitz separates in great quantity from those plants when they are dry. It attaches these materials upon a single flexible branch above its fork. When it has sufficient material it begins the real substance of its nest, which is composed of the down of the catkins of the willow and poplar, and is placed *below* the fork of the branch above mentioned. It first forms an outline of the nest, about three centimetres wide, into which it introduces at least one twig of the tree into each side of the nest. When this outline is sufficiently long, it takes the ends of the filaments and joins them together, so as to form the bottom of the nest. It now lines the two sides of the nest with down, proceeding from the bottom to the top, until it has succeeded in forming a nest which has two openings. Then it lines

the centre of the nest with softest down of the willow, and then closes up one of the openings. It strengthens the outside with a greater quantity of willow-down, to which it often adds tufts of sedge, reeds, and thistles, and then diminishes the other opening, and forms a projecting conduit or passage. It uses no animal production in this construction, which takes about four weeks to complete. This is the real form of these nests, all those with two openings being imperfect constructions, and the error has been perpetuated in consequence of the female commencing to lay eggs before the nest is completed, in which both male and female assiduously engage. If the process of sitting commences before the nest is finished, the work is carried on by the male alone. There are very few places in the kingdom of Poland where the Remitz builds. The locality is generally some large pond covered with rushes and bushes, situated on the right hand shore of the Vistula, and in the vast wooded marshes found in the neighbouring country of Paleria—the low and marshy part of Minsk, Volhynia and Grodno. There are a few which nest on the shores of the Vistula, but none have been found on the left side of the river.

The nest is placed on different species of poplar, willow, and alder, situated from one to fifteen metres or more above the ground; lowest on the osiers, and highest on the poplars. They are not always suspended over the water; more frequently over the ground, but always in places surrounded by water. I have never found them in thickets, but in spots more or less open. In the thick osier grounds they are only found at the edges of the openings and glades. The nest is very easy to find when building, or when the brood is young, for then the parents are always at hand, and give

warning of the approach of danger by a slight prolonged whistling, (sifflement.) When the female sits, the male often goes away and gives no warning, but as soon as the nest is taken he appears, perches himself on the place it once occupied, and never ceases to bewail its loss."

Count Mühle remarks that in Greece it is very difficult to get specimens of the Penduline Tit, because it lives and breeds in impenetrable swampy woods, surrounded by grass land also frequently under water. He found the nests frequently in the winter empty, when the trees were leafless.

The male bird in breeding plumage has the top of the head and throat white, frequently verging into grey, which extends to the nape and scapularies. The back and wing coverts rich russet, becoming lighter towards the rump. Forehead black, edged with deep ochreous; cheeks and ear coverts black; neck and crop light russet, spotted with the same deep rich ochreous colour of the back; the rest of the abdomen light fawn-colour, the flanks darker; primaries clay brown; secondaries same colour, slightly tipped with white; tertials brown, deeply bordered with greyish white, tinged with russet; tail of moderate length and emarginate, the feathers all more or less brown, bordered with greyish white; beak black; feet and legs lead grey; iris yellow.

The female has the top of the head grey, and the black of the forehead is wanting, but there is a spot of ochreous brown just above the base of the beak; the inferior parts are of a deeper fawn-colour than those of the male, and the brown of the wings and tail feathers is lighter, and the grey border not so broad.

The young before the first moult has the black parts of the forehead, cheeks, and ear coverts replaced by

russet; the ochreous colour of the back is less deep than in the adult; the under parts of the body are of a light red.

My figure of this bird and its egg are from specimens kindly sent me by the Rev. H. Tristram. The nest is after Gould.

It has also been figured by Buffon, pl. enl. 618, fig. 3, and 708, the young before the first moult under the name of *Mésange de Languedoc;* P. Roux, Ornith. Prov., pl. 124, fig. 1, adult male; fig. 2, head of young; Bouteil, Ornith. du Dauph., pl. 31, fig. 6; Gould, B. of E., pl. 159; Naumann, Vogel. Deutsch, vol. 4, pl. 97, male, female, young, and nest; Temminck, Atlas; Vieillot, Faun. Franc., pl. 50, fig. 2 and 3; Albin, vol. 3, pl. 57; Bechstein, Naturg. Deut., vol. 3, pl. 38, fig. 2; Meyer, Vog. Deut., part 10.

There are one or two other *Paridæ,* which require a short notice.

Parus Carolinensis cristatus, Brisson; *P. bicolor,* Linnæus and authors, was figured by Gould, pl. 152, Birds of Europe. It has however been omitted by Schlegel and Bonaparte from the European list, and is admitted with doubt by Degland. Mr. Gould now thinks that it ought to be erased, in which opinion he is joined by all the best modern ornithologists.

Parus borealis, Selys; *Pœcilia borealis,* Bonaparte.—Mr. Newton's valuable remarks about this species in the notice of the Siberian Tit, in the last number, are I think sufficiently strong to warrant my excluding it from the European list as a distinct species. It is so closely allied to our Marsh Tit, *(P. palustris,)* that it can only at the most lay claim to be considered a permanent

variety or race of that species. I have, however, been favoured by Mr. Wheelwright, of Gadsjo, near Carlstadt, in Sweden, with some remarks about this bird, which I will insert. Mr. W., who has had many opportunities of observing this and others of our most interesting European species, writes to me,—

"It so much resembles our Marsh Tit, both in habit and appearance, that I really think it can hardly be called a separate species. There are, however, the following differences, which are constant:—

Palustris.—Head glossy silk black; cheeks and sides of the neck white, rather tinged with black; back blackish grey brown. The edge of the outer web of wing feathers a little paler than the back.

Borealis.—Head walnut dull black; cheeks and sides of the neck clear white; back grey. The edge of the outer web of wing feathers nearly clear white.

In *Borealis* the tail is longer and different in construction. The outer tail feather is about two and a half or three lines longer than the middle one, which is nearly as long as the longest in the tail. The outer feather is considerably shorter than the other. In *Palustris,* on the contrary, the outer tail feathers are generally of the same length as the middle ones, and always only about a line shorter than the longest in the tail.

Nilsson is of opinion that the species are distinct, and Kjærbolling agrees with him.

If I remember right the British Marsh Tit always builds its nest with moss, etc. Now the nest of our *P. borealis* is always built of the fine under bark of the dead alder tree. That of the Crested and Blue Tit of moss, and sometimes feathers.

P. borealis is very common in the south of Sweden,

and only accidental in Denmark. They say *Palustris* goes as far north as the birch grows. It is, however, certainly very rare here, for all I kill are *Borealis*. The further north we go after passing Gefa, the less common it becomes, being replaced by *P. sibiricus*, which is very rarely killed south of Stockholm. *P. cyanus*, according to Nilsson, is only found in the north of Sweden."

P. bockhariensis, Brehm, is said to be occasionally seen in the north of Europe; but I believe there is no good authority for its introduction into the European list.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus EMBERIZA. *(Linnæus.)*

Generic Characters.—Beak short, strong, conical, compressed, and sharp-pointed; the edges of both mandibles curved inwards, with the commissure more or less oblique; the upper mandible narrower than the inferior one, and internally in the palate, or roof, there is a bony and projecting tubercle. Nostrils basal, round, and partly hidden by small feathers in front. Feet with three toes in front and one behind, the front ones entirely divided; the hinder toe carries a claw, short and curved: in front the claws are rather long, curved, and strong. The wings with the first primary slightly shorter than the second and third, which are the longest in the wing. Tail forked or slightly rounded.

BLACK-HEADED BUNTING.

Emberiza melanocephala.

Emberiza melanocephala,	Scopoli, 1768. Gmelin.
" "	Latham. Temminck. Cuvier.
" "	Keyserling et Blasius.
" "	Schinz. Schlegel. Degland.
Tanagra melanictura,	Guldenstedt.
Xanthormus Caucasicus,	Pallas.
Fringilla crocea,	Vieillot.
Euspiza melanocephala,	Bonaparte.
Bruant-Crocote,	Of the French.
Schwarzköpfiger Ammer,	Of the Germans.
Zigolo Capinero,	Of Savi.
Black-headed Bunting,	Latham, nec Bewick, vel Yarrell.

Specific Characters.—The first primary equal in length to the second, and slightly longer than the third; primaries and tail light brown, the latter without any white markings. Back and rump rich russet, tinged with yellow. Length six inches and a half; from carpus to tip three inches and three-quarters; tail three inches; beak from gape seven-tenths of an inch; tarsus nine-tenths of an inch.

The Buntings are a very natural group, and easily distinguished, by their peculiar characters, from the rest of the family. They live in fields, woods, gardens, road-sides, or banks of rivers and marshes. They feed upon farinaceous seeds and insects. The sexes are always distinctly marked, the males having the most vivid coloration. The young resemble the females, except in having duller colours, and being more spotted. Temminck says none of the European species moult more than once, while the exotic species do so regularly, the colours of the male changing considerably, having in summer, very brilliant colours, but in winter the quiet and modest plumage of the female. Degland remarks,—"The greater number, independently of the usual moult which takes place towards the end of summer, have also in spring a change in coloration. This change is occasioned by the under part of the plumage, which is always the most brilliantly-coloured, being in the spring uncovered by the rubbing away of the edges of the feathers, which are of a duller tint." The Buntings nest on the ground, on banks, or among grass, in bushes, shrubs, or reeds. Those species which have the hind toe long and straight have been separated by Meyer, under the generic term *Plectrophanes*. The others form a very closely-allied and distinct family, notwithstanding which Kaup has divided the genus into eight.

Of the European species different authors vary in the number which they assign to that fauna. Temminck, in the last edition of his "Manual," describes sixteen species, which is the number also given by Schlegel. Degland adopts this list, with the exception of one addition, *E. borealis*. Bonaparte gives nineteen species, in five different genera. On the whole I think the list of Schlegel best represents the European members of this genus. Of these, five, and both the species of *Plectrophanes*, are found in the British Isles.

The name "Black-headed Bunting" has been unfortunately given by modern English authors to our well-known bird the "Reed Bunting." As, however, the subject of this notice can lay claim to a much older title, and as I do not feel justified in creating a new one, I hope English ornithologists will use the name "Reed Bunting," first given, I believe, by Pennant, to our British species.

The Black-headed Bunting is an inhabitant of the southern parts of Europe and Asia Minor. It inhabits the Caucasus, and is very common in Georgia, about Tiflis, and in Greece, and is not rare in Dalmatia, where it has the name of Ortolan, though a very different bird from that which bears this name in France. It is common throughout the Levant, and is sufficiently so, according to Temminck, in Istria, in the neighbourhood of Trieste, in the bushes and slopes of the hills, which border the Adriatic. It has been occasionally, but accidentally found in Lombardy, Provence, Saxony, and in Germany, in the neighbourhood of Vienna.

It sings very agreeably, preferring to perch on some post in the open country.

It nests upon shrubs, particularly, according to

Degland, on "the *Bariurus aculeatus*, and not far from the ground. It lays from four to five whitish eggs, which are covered with very small spots and dots of a more or less ashy grey; some specimens are of a greenish white, with spots of a rust brown at the largest end."

In a long and interesting letter, full of valuable information, which I have received from Dr. Leith Adams, from Malta, I extract the following remarks about the bird I am now noticing:—"*Euspiza melanocephala*, Bonaparte, is almost the prototype of *E. simillima* of Blythe; the latter authority fixes on the following as distinctions. The closed wing of *simillima* is three inches and a quarter, instead of four inches, and altogether it is not so large a bird. The species frequents southern India, and until Mr. Blythe made the above diagnosis, Indian authors considered it identical with *E. melanocephala*. I have seen three specimens, and could not make out any decided distinctions. Might not climate account for the smaller size?"

Count Mühle says "It comes (into Greece) at the end of April, and I have for many years observed its arrival. On a clear bright morning in spring the hedges near the coast are often covered with them, though previously none were to be seen. It builds and breeds on the overgrown hills, and goes away early in August. During the breeding time the male sits on the tops of the bushes, and lets its agreeable simple, Yellow-hammer-like song be continually heard. It is very stupid, and not at all shy; indeed it is frequently killed, by those in quest of it, with a stick alone. It is at the same time strange that the female is so seldom seen. I have only met with a very small number. When they first arrive the male

has the rust-red plumage of the head in abundance, but this is by degrees rubbed of."

Brehm, in Bädeker's work upon European eggs, says, "Very little is known about the nidification of this bird. Its eggs, of which it lays five, are very similar to those of the other Buntings. One variety is like that of the Snow Bunting. They are of a blue greenish ground, delicately marked with dark and reddish grey spots, mostly at the larger end. In form they are a longish oval, and the shell very soft and brittle."

This very beautifully-marked bird has the breeding plumage of the male as follows:—Head, nape, and auditory regions deep black. The whole of the back, scapularies, and upper wing coverts rich dark russet, tinged with yellow; chin and all the inferior parts bright citron yellow. Wings and tail brown; the primaries lightly edged with grey. Beak bluish grey; feet yellowish brown.

The female, according to Temminck, has all the upper parts of a russet grey; the throat white; inferior parts reddish white; under tail coverts yellow; greater wing coverts and the first primaries bordered with reddish grey, having their centres black.

My figures of this bird and its egg are taken from specimens kindly sent me by Mr. Tristram. They are from Greece. The egg is from a nest of four taken by W. H. Simpson, Esq., at Missolonghi, January 3, 1859.

The bird has also been figured by Temminck in his Atlas; Roux, Ornith. Prov.; Güldenstedt, Nov. Com.; Naumann, Naturg. Neue Ausg., pl. 101, f. 2; Gould, Birds of Europe, pl. 172. Four figures of the egg are given in Bädeker's illustrations of European eggs.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus EMBERIZA. *(Linnæus.)*

MARSH BUNTING.

Emberiza palustris.

Emberiza palustris,	SAVI. BONAPARTE. TEMMINCK.
" "	SCHINZ. SCHLEGEL.
" *pyrrhuloides,*	PALLAS.
" *Caspia,*	MENETRIES.
Schænicula pyrrhuloides,	BONAPARTE.
Bruant des Marais,	OF THE FRENCH.
Sumpfammer,	OF THE GERMANS.
Passera di padule,	SAVI.

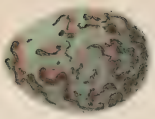
Specific Characters.—Beak short, thick, and strong, the upper mandible curved; as broad at the base as long. Rump grey, and marked with brown; under tail coverts white; primaries slightly bordered with russet, the first being shorter than the fourth. Length of a young male sent me by Mr. Gould, seven inches; from carpus to tip three inches and a fifth; beak three-tenths of an inch; tarsus one inch.

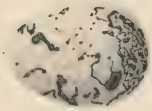
THE Marsh Bunting is an inhabitant of the south of Europe, being found especially in the south of France, Italy, and Sicily.

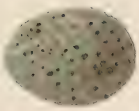
It was at first described as a distinct species by Savi, in his "Ornitologia Toscana." Temminck doubted whether it was distinct from *E. schæniculus,* in any-

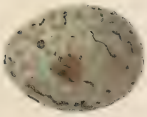
thing except the shortness, stoutness, and convexity of the beak, and in the greater distinctness and brilliancy of the colouring. Bonaparte, on the contrary, not only admits the Marsh Bunting as a distinct species, but adds another, which is said to be intermediate in character between this and *schæniculus*, under the name of *S. intermedia*, the *E. intermedia* of Michahelles, the *E. canneti* of Brehm; and he places the three in a new genus, that of *Schænicola*. Roux also denies that the Marsh can ever be confounded with the Reed Bunting; and Degland adds several points of distinction to those given by Temminck, which I have incorporated after verification in my specific diagnosis. Degland thinks that Temminck did not know the true *E. palustris*, but that the specimens upon which he assumed its identification with *E. schæniculus* were, in fact, larger specimens of this latter species. In a note which I have just received from Professor Blasius, of Brunswick, that distinguished naturalist places this bird as a variety of *E. schæniculus*.

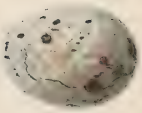
Such being the difference of opinion about the specific distinctness of this bird, let us hear what Savi himself says about it. I copy the following from his "Ornitologia Toscana," tome secondo, p. 92:—"The Zigolo of which I speak has been for some time in the hands of ornithologists. The Bunting, of which there is a drawing in the 'Storia degli Uccelli,' under the name of *Migliarino di Padule*, is clearly recognised by the form of its beak, as belonging to this species. In the Museum of Turin, and in that of the Jardin des Plantes at Paris, it is preserved as a variety of *Emberiza schæniculus*. Signor Dott: Pajola sent it to me last year from Venice, describing it as a new species. I had long fancied it was distinct, but as











1. MARSH BUNTING. 2. MEADOW BUNTING.

3. RUSTIC BUNTING. 4 & 5. YELLOW-HEADED BUNTING.

on examination of the distribution of colour, the proportions of its quill feathers, etc., I did not find any characters to distinguish it from the other species, and knowing then nothing of its habits, I had never made it known as new, and, to avoid making a mistake, I placed it in the Museum of Pisa as *E. palustris*. Since then, however, having been able to make some new observations upon the form and habits of the two species, I am persuaded they are decidedly different, and the principal reasons which induce me to form this opinion are the following:—

The distinctive characteristics of *E. palustris* and *E. schæniculus* are the greater size of the former, its head larger in proportion to the rest of the body, its tarsi proportionally shorter and thicker, its upper plumage more distinct in coloration, and its beak differing in form and size.

Now as these characteristics only consist in a greater development of parts, and a stronger degree of colour, it may be objected that this is owing to difference in age; that is to say, that the *Migliarino di Padule* in growing old may acquire the proportions and colours of the *Passera di Padule*. As far as size and colour are concerned, there would be no difficulty in understanding this, but it is not so easy to account for the difference in the beak, and almost impossible to conceive such a change in the *form and dimensions of the masticatory organs, and such an alteration in the other bones of the face and skull*, in the adult age of animals, in whom the consolidation of bone rapidly occurs. But that I might have positive proof, I kept several Reed Buntings in my house for about a year, and as I had supposed no change in the form or dimensions of the beak occurred. Besides this,

the habits of the two birds prove them to be of different species. *E. schæniculus* lives among bushes, and always remains on ground far from water, feeding upon seeds; while *E. palustris* is always found established near water, climbing up the reeds, and feeding on the muddy banks of ponds. Then the two species are never found mixed together in the same flock. I have killed as many as ten in the same flock without finding one *schæniculus*, and, what is worthy of note, without in such a number finding one with the beak of the same size and form as in that bird, which would naturally have been the case, had they been varieties of the same species."

At page 325 of the third volume, we have also the following interesting account of the habits of this bird: —"The Black-headed Bunting is found in Tuscany during the summer, inhabiting watery places covered with reeds. A great number hatch in the marshes of Castiglione, so that in crossing the intricate passages made by the fishermen cutting the reeds, which rise so high as to exclude all but a small portion of sky, the low moaning of the wind is uninterrupted, except by the distant voice of the Tarabugio, (Bittern,) which sounds shrill over the dead water, or the continual croaking of the *Passera di Padule*, which then remains obstinately hidden. It has a voice similar to the *Rena esculenta*, (frog,) but it is even more sonorous."

Count Mühle, in his "Beitraege zur Ornithologie Griechlands," says, "*Emberiza pyrrhuloides* is considered to be a distinct species from *E. schæniculus*. All the proportions are larger and stronger, the head much thicker and longer, the beak peculiarly arched, unlike that of any other species, the colouring of the plumage is much brighter, and in broader masses, the black on

the head and breast much deeper. It breeds in the impenetrable reed beds, coming when they are green. When the swamps are swollen it is not to be got at, but later it arrives on the borders of these swamps, and then it is to be discovered by its contrast with the blood-colour of the club reed. It is very lively; the male clings to the joints of reeds, and utters, like *Salicaria turdoides*, its crisp song. It is not so plentiful as *E. schæniculus*, and goes away earlier."

Enough has, I think, been said to prove the specific distinction of this bird. Of its nidification Degland tells us:—"It nests on the edges of marshes, among rushes, between the roots of aquatic plants. Its nest is composed exteriorly of the filaments of vegetables, dry plants, and is lined with horse-hair. Its eggs, in number from four to five, are of a dull white, distinctly marbled with brown, (according to Temminck,) or (according to Crespon) of a white, shaded into greyish, and marked with a multitude of small brown spots, most numerous at the larger end."

"In manners and habits the Marsh Bunting differs but little from the Reed Bunting. Its note, according to Crespon, is briefer and stronger. The same author remarks that it breaks the stems of the reeds to eat the pith, and that it also feeds on insects."

The following is Savi's description:—The male in breeding plumage has the beak thick, compressed laterally, curved above and below, obtuse at the point, and of a black colour. It rather resembles a Sparrow's beak, but is shorter. Head, neck, throat, and middle part of breast black; there is a large white band beginning at the angle of the beak, and uniting itself with the white of the flanks and abdomen. Scapularies black, broadly margined with fulvous chesnut; the rest

of the upper feathers ashy black, margined with chesnut. Flanks and abdomen white; upon the flanks longitudinal spots of obscure black. Primaries black, margined with chesnut, the lesser wing coverts having a broader margin of fulvous chesnut; under wing coverts white. The first tail feather white, with a large black wedge-shaped spot on the inner web at the base, and a smaller one at the tip; the second tail feather black, with a white wedge-shaped spot at the tip on the inner side; the other tail feathers black; the two middle feathers edged with brownish yellow. Feet rather robust, and obscurely black; claws black.

In autumn the adult male has the feathers of the head, throat, neck, and middle part of chest black, shaded off to the point. The white feathers of the neck become so shaded towards the tip, as almost t obscure the white. All the upper feathers have a bay margin, more extended, terminating in brownish yellow.

The female has the vertex, sides of the head, and neck of an obscure chesnut colour, with black spots; nape, back, and wings dark brown; a brown band on the cheeks terminates near the ear, the region of which is covered by a nearly black spot; throat and neck white, shaded with russet; from the angle of inferior mandible there is a mottled black band extending to the chest; chest and flanks white, shaded with russet, and covered with long obscure spots.

My figure is that of a young male, kindly sent me by Mr. Gould.

This bird has also been figured by Stor, Uccelli Tav., 336, (a good figure of male;) by Roux, Ornith. Prov., pl. 114, male in autumn, fig. 2, head of female; Ch. Bonaparte, Faun. Ital., pl. 35, f. 1, male in spring, f. 2, female, f. 3, young; Gould, B. of E., pl. 184.

PINE BUNTING.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus EMBERIZA. *(Linnæus.)*

PINE BUNTING.

Emberiza pityornis.

Emberiza pityornis,	PALLAS. ITER, 1776.
" "	GMELIN, Syst., 1788.
" "	LATHAM; Ind., 1790, et Syn., iii, p. 203, et p. 256, (as Dalmatian Sparrow.)
" "	TEMMINCK; Man., 2nd. ed., 1820.
" "	BONAPARTE; Birds, 1838.
" "	KEYSERLING ET BLASIUS; Die Wirbelt: 1840.
" "	SCHINZ; Eur. Faun. 1840.
" "	SCHLEGEL; Revue, 1844.
" *scotata,*	BONAPARTE; Revue et Mag. de Zool., April, 1857.
Passer esclavonicus,	BRISSON, 1760. DEGLAND, 1849.
Emberiza Bonapartii,	BARTHELEMY.
Bruant à couronne lactée,	OF THE FRENCH.
Fichtenammer,	OF THE GERMANS.

Specific Characters.—Rump, throat, and cheeks dark russet; top of the head, and distal half of the two lateral tail feathers white; the first four primaries of equal length. Length seven inches: carpus to tip three inches and a half; tail three inches and a half; beak from gape half an inch, breadth at base three-twentieths of an inch; tarsus four-fifths of an inch.

The Pine Bunting is an inhabitant of Siberia, ranging thence to Turkey, being found occasionally on the shores of the Caspian Sea. Temminck says it is found during the winter in Hungary and Bohemia, and accidentally in Austria and the Illyrian provinces. Its real home is in the north and west of Asia, its occurrence in eastern Europe being considered accidental by most of our modern ornithologists. That it has, however, a real claim to a place in the European fauna, seems, I think, settled by the paper of Prince C. Bonaparte, in the "Revue et Magasin de Zoologie" for April, 1857, in which he describes *a young male* which was killed in the neighbourhood of Brescia, in Lombardy, and sent to him by M. Parzadaki, under the name of *Emberiza scotata*. This bird is described in the above paper under the name of *Buscarla pityornis*, and figured in the same number of the "Revue" as *Emberiza scotata*.

Count Mühle says that he has often seen the female and young in Roumelia in the early autumn. Naumann ("Naturgeschichte der Vogel Deutschlands") says the Pine Bunting is found in Siberia, where, from the Ural Mountains to the River Lena it is very common. "It also comes into the southern provinces of European Russia, into Turkey in winter, and, rarely, into Bohemia, but is never found in the middle or north of Germany. It loves rocky places, but not the mountains themselves, frequenting more the valleys between them. There it must be sought for near the water, on the banks of brooks, rivers, and lakes, where it lives among the sedges and low bushes. It derives its name from the pine woods of Siberia. It remains only a short time in the woods, like the Reed Bunting in our timber woods."

The Pine Bunting is a cheerful lively bird, with a note similar to the other members of its family. In its habits, it resembles the Reed Bunting. It feeds on insects, and seeds of some of the mountain plants, and probably also on those of the reed and other water plants; in winter on oats, millet, etc. Of its nidification I am sorry to say I can add nothing.

The male has the top of the head white, bordered with black, which is also the colour of the forehead; a band extending from the base of the beak beneath the eyes, a demi collar round the front of the neck, the centre of the abdomen, the distal half of each lateral tail feather, and under wing and tail coverts, white. Scapularies and upper wing coverts chesnut brown, with longitudinal patches of black; rump russet; tail above dark brown. Primaries dark brown, edged externally with white; tertials dark brown, deeply bordered with russet; cheeks and throat deep chesnut; crop and flanks mottled with same colour of a lighter tint; wings and tail below brown; beak brown above, yellowish beneath; tarsi yellow; iris brown.

In the female, according to Degland, the white mark on the top of the head is only slightly indicated; there is no russet on the throat; the upper parts are of a brown russet, inferior whitish; wings and tail as in the male.

The young male is thus described by Prince Charles Bonaparte, in the "Revue et Magasin de Zoologie" for April, 1857:—"The top of the head, the auditory region, and the shoulders, bright bay; the feathers on the top of the head blackish in the middle, and the ears are edged with the same colour in an undecided manner. The large superciliary feathers and the moustache, which are spread out at the end, and so

nearly uniting as to form almost a circle round the entire cheek, are of a whitish colour, slightly tinted with an isabelle rose; immediately below the beak proceeds, as if to extend itself to the beginning of the chest, a long pyriform band of an elegant orange rose-colour, which is rarely seen in nature, and which is of the same tint as the *Anthus rufigularis;* this band is completely surrounded by a black border, which is spread out on the sides of the neck; the upper part of the neck and the rump are of a nearly pure ash-colour; the back is variegated with black, bay-coloured, and whitish spots; the under parts are whitish, with large brownish longitudinal wedge-shaped spots; the lesser and greater wing coverts are, as well as the tertiary feathers, black, with red and white external edges; the primaries, of which the first is about the same size as the fifth, are brown, unicolorous, with a slight edging of white at the tip. The tail is slightly notched; the two middle feathers, short and very pointed, are black along the shaft, and the first is edged with reddish grey, the two following on each side are quite black, and the two external feathers have a large white cuneiform spot, much more extended upon the last feather, of which the very narrow outer plumes are white, and which has ashy brown grey on the shaft, and a large spot on the tip."

"It is well known that this *Emberiza* is also the *E. passerina,* Messerschmitd; *E. albida,* Blyth; *E. leucocephala et Dalmatica,* Gmelin, and *Sclavonica,* Degland. It is probably an older species which M. Barthelemy, of Pomerania, has called after me, *E. Bonapartii.*"

My figure is from a specimen kindly sent me by Mr. Gould.

It has also been figured by S. G. Gmelin, Nov. Comm.

Acad. Petrop., pl. 23, fig. 3; Lepechin, Ibid, pl. 25, fig. 2; Gould, B. of E. pl. 104; Bonaparte, in Revue de Zoologie, for April, 1857, (young male.)

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus EMBERIZA. *(Linnæus.)*

CRETZSCHMAER'S BUNTING.

Emberiza cæsia.

Emberiza cæsia,	CRETZSCHMAER; in Rüppell's Atlas, (Vogel,) pl. 10, B.
" "	TEMMINCK, 1835.
" "	KEYSERLING ET BLASIUS; Die Wirbelt: 1840.
" "	SCHINZ; Europ. Faun., 1840.
" "	SCHLEGEL; Revue, 1844.
" "	DEGLAND; 1849.
" *hortulanus,*	BLASIUS; in Lit.
Fringillaria cæsia,	BONAPARTE; Consp. Av. Eur., 1850.
Bruant cendrillard,	OF THE FRENCH.
Grauköpfiger Ammer,	OF THE GERMANS.

Specific Characters.—Beak brown above, reddish below; rump russet grey; head, nape, and crop slate grey. First three primaries of nearly equal length, and considerably longer than the fourth. Primaries fringed on their outer web with russet grey. Length five inches and three-quarters; carpus to tip three inches and three-tenths; beak two-fifths of an inch; tail three inches; tarsus seven-tenths of an inch.

CRETZSCHMAER'S Bunting, so called from the name of its first artist in Rüppell's Atlas of the birds ob-

served in the North African journey of that distinguished naturalist, is found in the south of Europe, and is a regular summer visitant into Greece, appearing there, according to Count Mühle, early in April, and leaving in August. Its principal home is in Syria, Nubia, and Egypt. Temminck suggests that it would probably be found more common in the south of Europe, but that its similarity to *E. cia* causes it to be frequently mistaken for that bird. Its capture near Vienna, in 1827, is also recorded by this naturalist, and M. Roux states that it is found in Provence, in company with *E. cia*. It has also been killed in the neighbourhood of Marseilles by M. Busonnier, as recorded by Degland.

Count Mühle says that it is the most common Bunting in Greece. "After its arrival in April it is found in flocks among the wild and rocky hills of the country, in company with *S. stapazina*, *Surnia noctua*, and *Turdus cyanus*. It is seldom found in fields or among bushes. It hops among the rocks with great agility, and its song is much more refined than that of the Ortolan. This bird (the Ortolan) first appears plentifully when *E. cæsia* has been gone some time, and is never found in the same localities, preferring bushy fields."

"*E. cæsia* builds its nest, which is like that of the Yellowhammer, but smaller, behind blocks of stone in a sage plant, off the ground. It lays four to six eggs, which are grey blue, sprinkled with liver-coloured spots. It feeds its young with ground beetles and the caterpillars which it finds among the flowers of the sage."

Of this bird in Palestine Mr. Tristram remarks, (Ibis, vol. i, p. 34):—"One of the most common birds of the

more fertile districts of Palestine. Perched on the topmost bough of a shrub or tree, it continues its monotonous song through the day, and is to be seen on almost every bush. In its habits and actions it is very different from its Algerian congener, *Emberiza Saharæ*, which it so nearly resembles in form and plumage, avoiding buildings, and not, as far as I am aware, perching on stones or walls. Its nest is placed near the ground, in a low bush."

As there is a considerable difference in the above two descriptions, I wrote to Mr. Tristram, who obligingly forwarded me the following explanation:—"I can only account for the discrepancy in the two histories, by the difference in the time of year. I was only in the Morea in winter, and in the north of Greece late in the spring, and I did not observe *E. cæsia*, so far as I recollect; but neither did I notice it in Palestine in the corn-fields, where we saw the Ortolan consorting with the Common Bunting and the Larks, but in the hill country of Judæa. It abounds in the olive-clad valleys and ravines to the west of Jerusalem, and I was struck by its habit of always perching on the bushes and shrubs, both on the uncultivated hills and about gardens. Probably when Count Mühle saw them they had not paired; when I fell in with them they were building. *E. cæsia* is, I should say, the commonest Bunting in Palestine."

Professor Blasius, of Brunswick, in a private letter to me, places *E. cæsia* as a variety of *E. hortulanus*.

The adult male in breeding plumage has the top of the head and a broad collar round the neck bluish grey; all the upper parts from the nape varied with dark brown and russet; throat, chest, and abdomen russet; primaries and tail feathers dark brown, bordered

with russet; two outer tail feathers with a large white patch on the inner web of their distal extremities; beak, tarsi, and feet reddish brown.

The female has, according to Degland, all the upper parts varied with brown and russet, having a strong resemblance to the female Ortolan in breeding attire; the inferior parts and under tail coverts russet, with brown striæ on the crop and chest.

Temminck says that the male and female in autumn have the colours less pure, with small striæ on the grey of head and neck; the feathers of the crop bordered with brown, and the russet red of the throat less pure.

My figure and description are taken from a male specimen kindly sent me by Mr. Tristram, marked "Emmaus, Judæa, March 25th., 1858."

It has also been figured by Roux, as a variety of the Meadow Bunting, in his Ornith. Prov. Atlas, pl. 112, (male;) by Cretzschmaer, in Rüppell's Atlas, pl. 10, fig. 6, (male in breeding plumage;) and by Gould, B. of E., pl. 181.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus EMBERIZA. *(Linnæus.)*

STRIOLATED BUNTING.

Emberiza striolata.

Emberiza striolata,	RÜPPELL; Atlas, (Vogel,) pl. 10, A.
" "	TEMMINCK; Man., p. 640, 1820.
" "	KEYSERLING ET BLASIUS; Die Wirbelt: 1840.
" "	SCHLEGEL, 1844. DEGLAND, 1849.
Fringillaria striolata,	LICHTENSTEIN; Cat. des doub. du Cabinet de Berlin, 1823.
" "	BONAPARTE; Consp Av. Europ. 1850.
Bruant Striolé,	OF THE FRENCH,
Gestreifter Ammer,	OF THE GERMANS.

Specific Characters.—No white mark on either of the two outside tail feathers. Rump and outer edge of primaries russet; first and fourth primaries of equal length, and shorter than the second and third, fifth shorter than first or second. Length five inches and a half; carpus to tip three inches; beak two-fifths of an inch; tarsus three-fifths of an inch; tail two inches and three-quarters.

THE Striolated Bunting, one of the smallest in the family, is an inhabitant of Africa. It was found by Rüppell in Egypt, and figured in his Atlas by

STRIOLATED BUNTING.

Cretzschmaer. Its European localities are Spain, in the Andalusian provinces of which country it is said by Temminck to be common. Bonaparte gives Lusitania as a locality.

In the "Revue de Zoologie," for March, 1857, it is placed by M. De Selys-Longchamps in the list of those birds admitted into the European fauna without sufficient authority. Temminck, however, says of it,—"Inhabits Andalusia, where it is sufficiently common, and perhaps also in other parts of southern Europe, which is the more probable since *E. cæsia* has been found in Greece, where it is very plentiful. The Striolated Bunting is found in winter on the coast of Barbary, and has been brought from Egypt by Ehrenberg and Rüppell; it also appears in winter in the neighbourhood of Abukol and Schendi. It lives among the bushes."

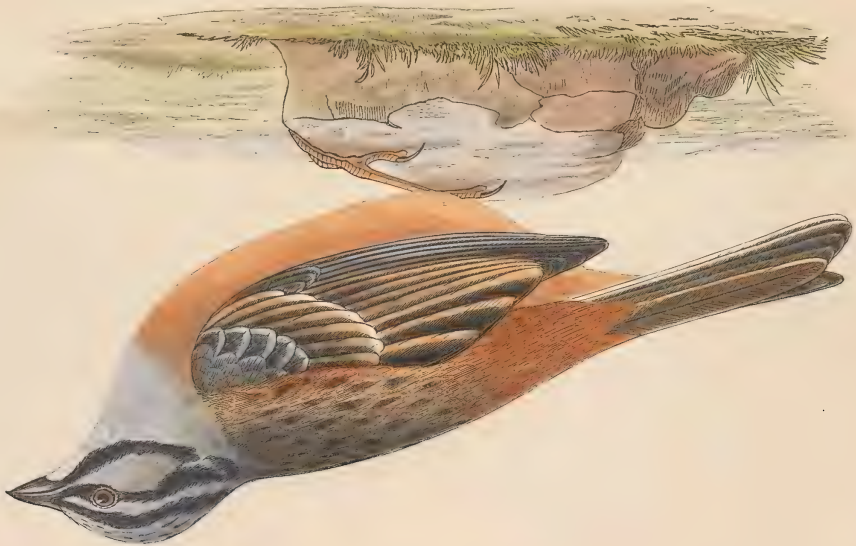
On the whole, I only admit this bird into my work provisionally, and as a doubtful European species, for whose accidental appearance we are more indebted to the proximity of the Spanish and African frontiers, than to any indigenous claim it can set up. If it should wander, however, and become settled in Europe, I hope that its likeness may be recognised from the figure which I give, and which is taken from a male specimen sent me by Mr. Tristram, marked "Nubia."

The adult male has the head, the cheeks, nape, and breast of a pure slate grey, marked with longitudinal spots of black; above the eyes, and from the angle of the jaw, and base of lower mandible proceed three white bands; scapularies, wing coverts, and rump lively russet red; primaries and outer tail feathers dark brown, edged with russet; middle tail feathers entirely dark brown; abdomen, flanks, and under wing coverts light

russet; upper mandible and iris brown; inferior mandible and feet yellow.

The female and young, according to Temminck, have the head and neck of a grey russet, marked with brown striæ, more or less deeply shaded; all the other parts as in the male, but the colours less lively and pure.

Figured by Cretzschmaer, in Rüppell's Atlas of African Birds, pl. 10, A.



GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus EMBERIZA. *(Linnæus.)*

MEADOW BUNTING.

Emberiza cia.

Emberiza cia,	LINNÆUS, S. N., and AUTHORS.
" *pratensis,*	BRISSON, Ornith., vol. iii, p. 266, 1760.
" *lotharingica,*	GMELIN; Syst., 1788.
" *barbata,*	SCOPOLI.
Cirlus stultus,	ALDROVANDUS; Ornith, vol. ii, p. 858.
Bruant fou ou de prés,	OF THE FRENCH.
Zipammer,	OF THE GERMANS.
Zigolo Muciatto,	SAVI.
Ortolan de Lorraine,	BUFFON.
Foolish and Lorrain Bunting,	LATHAM.

Specific Characters.—Head grey, longitudinally marked with black; rump russet red; primaries edged on the outside with grey, first and sixth of equal length, and considerably shorter than the second, third, fourth, and fifth, which are nearly of the same length, the third being the longest in the wing. Length six inches and a fifth; carpus to tip three inches and a fifth; beak half an inch; tarsus four-fifths of an inch; tail three inches and a fifth.

THE Meadow Bunting is an inhabitant of a great part of the south of Europe, more especially Italy,

Spain, and the shores and islands of the Mediterranean. It occurs in the south of Germany, as far as the Rhine. It is stationary in some parts of Provence, and migratory in others: it is also a bird of passage in Lorraine. It is plentiful in Greece during the winter months, in which season it is mentioned by Mr. Carte as common in the Crimea, and by the Honourable Mr. Powys ("Ibis," vol. ii, p. 138,) as resident, but not abundant, in Corfu. It does not appear to have been found in the north of Germany; and Temminck says it does not occur in Holland. Dubois informs us that it is occasionally found in Austria and Bavaria, and is very rare in Belgium. It is a bird of passage in Switzerland. It ranges through a great part of Asia—Syria, Arabia, and the Daouria; and is mentioned by Mr. Tristram among the birds of North Africa, ("Ibis," vol. i, p. 295.)

Of its habits Naumann has given us the best description, and I am principally indebted to him for the following history:—The Meadow Bunting appears in Central Germany in March and April, and leaves in October or beginning of November, after which a solitary bird only is to be found. In Switzerland it is much rarer than the Cirl Bunting. It likes to live in mountainous places, not, however, in the wild and deserted parts, but among the fertile valleys. Sometimes it seeks out meadows, and is found among the bushes bordering woods, and it especially loves those places which are near cultivated fields and gardens. It also frequents the neighbourhood of water, and lingers about the banks of brooks and ditches, where it sits among the thickest bushes, and is often seen on the ground.

It is a lively restless bird, pecking and fighting with other birds, as well as with the members of its

own family. Its motion on the ground is heavy, and it has a quick, wavy, or jerking flight. Its habits altogether are very similar to those of the Yellowhammer.

Its call-note is a short sharp 'zi-zi-zi,' which sometimes sounds like 'zip,' and hence its German name. The song of the male is very similar to that of the Yellowhammer, but shorter and clearer. Bechstein expresses its note as 'zi-zi-zi-zirr-zirr,' others as 'zip-zip-zip-zai-zip-zip-zip-zi.' It is a diligent songster, and often sits upon the top of a rather low tree or bush. When kept in confinement the Meadow Bunting is sometimes heard to sing at night. It is a pleasant bird in a room, and soon becomes very domestic, and may be kept for several years. Bechstein had a pair which he kept for several years. They are very affectionate to each other, and live sociably with different birds in confinement, preferring the Yellowhammer.

The Meadow Bunting feeds upon insects, grass seeds, oats, and millet seeds. It will also eat hemp and poppy seed, and in confinement become quite content and healthy upon this food, with the addition of a little bread soaked in milk; as a treat nothing is so welcome as ants' eggs or a mealworm.

Naumann further remarks that they breed certainly in Germany, in Austria more frequently, but in Italy plentifully. The nest he describes as like that of the Yellowhammer, and the eggs similar to those of that bird, but they may be readily distinguished from both it and every other Bunting. They are roundish, short, and oval; dirty or greyish white, with many reddish and rust-brown streaks and hairs marked upon them. There are also shorter streaks, which the other Buntings have not. Brehm, in his description of the egg in Bädeker's work upon European eggs, says, "It

prefers high meadows, where it is found among the short bushes in the neighbourhood of vineyards. It does not often build on the Rhine. Its nest is placed among the crevices of the artificial fences which surround the mountain vineyards, and generally contains four eggs, which have a grey whitish ground; shewing through it, brown, black, and grey lines, which often form a zone round the middle of the egg. These lines are connected together and form peculiar markings, by which they can be readily distinguished from any of the varieties of the Yellowhammer. Rarely they are marked with points, or round spots placed solitarily. They breed twice. The young birds are similar to those of the Yellowhammer, and, like them, are frequently bred in confinement."

Savi says it is doubtful if they breed in Tuscany, but they do so freely in the ultramontane countries. Their nest, which is placed in low bushes, is made of moss externally, and with root filaments and wool internally. Eggs four or five, with irregular zigzag lines and spots of black or dark violet-colour.

Count Mühle's description, in his "Grecian Ornithology," of the habits and plumage of *E. cia*, is evidently taken from another species. He himself suggests the *E. fucata* of Pallas, with which his description to a certain extent agrees. He says the bird which he describes as *E. cia* is "neither confiding nor stupid, but shy, and knows how to escape the ambush of the hunter very skilfully. It flies up quickly, and *runs along the goat-paths as quickly as a Lark.*" This certainly is not the habit of the Foolish Bunting. Moreover, he remarks, "the first primary is quite as long as the fifth, and much longer than the sixth;" which measurements are quite different from those of

E. cia, as will be seen by reference to my specific diagnosis of that bird.

Naumann concludes his account of the Meadow Bunting thus:—"The Zipammer, from its confiding nature is easily shot. They may be drawn in flocks by the Yellowhammer, as a decoy, and thus be captured in great numbers, so that in France they have received the name of Fool. They are very good eating; they rejoice us with their song, destroy pernicious insects, and do no damage."

The adult male in its breeding plumage has the head and neck bluish grey, with two black bands along the sides of the vertex, and two other narrower bands of the same colour, one of which passes through the line of the eye, and the other forming a moustache; these lines unite in the parotid region. The upper parts are bright russet, varied by longitudinal black striæ; rump chesnut red; the throat is white; neck and chest delicate bluish grey; the rest of the under parts are russet red, brighter on the sides of the chest and flanks. Wings marked with two narrow whitish bands; wing coverts colour of the back; primaries blackish, bordered with russet; tail black, with the middle feathers bordered with russet, and the two most external marked with a large white patch on the internal webs. Beak blackish above, grey below; feet and iris brown.

The female has the head, nape of the neck, and body varied with russet and black; rump and under tail coverts bright russet; inferior parts russet red, with the throat whitish; front of the neck and chest shaded with dull grey, and spotted with brown; flanks of a deeper russet, and more or less spotted with russet brown.

The young before the first moult differ considerably from the adult. Top of the head and nape grey, with a black streak in the middle of each feather; upper parts of the body and wings varied like the female, but of a more grey russet; under tail coverts russet, with longitudinal spots of black; throat, front and sides of neck, and top of the chest grey, marked with black spots; the rest of chest and abdomen white, lightly washed with russet.—(Degland.)

My figures of the bird and its egg are from specimens sent me by Mr. Tristram; the former is marked "Ksour, Jan. 28th., 1857," and is therefore in its winter plumage. The egg was from a nest of four, taken by Mr. Tristram near Algiers, 1856.

The bird has also been figured by Buffon, pl. enl. 3, fig. 2, female or young under the name of *Bruant de prés de France*, and 511, fig. 1, male in breeding plumage, under the name of *l' Ortolan de Lorraine;* Naumann, Naturg. Neue Ausg., pl. 104, figs. 1 and 2; Vieillot, Faun. France, p. 94, figs. 2 and 3; Roux, Ornith. Prov., pl. 111 and 112, male and female, but the figure marked a variety in pl. 112, is a male of *E. cæsia*; Bouteil, Ornith. du Dauph., pl. 32, fig. 6; Gould, B. of E., pl. 179.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus EMBERIZA. *(Linnæus.)*

RUSTIC BUNTING.

Emberiza rustica.

Emberiza rustica,	PALLAS; Voy., vol. iii, p. 698, 1776.
" "	LATHAM; Ind., vol. i, p. 413.
" "	TEMMINCK, 1820. BONAPARTE.
" "	SCHINZ. SCHLEGEL. DEGLAND.
" *lesbia,*	CALVI; Catal. d' Ornith. di Geneva, p. 46.
" "	SAVI; Ornith. Tosc., vol. iii, p. 223.
" *borealis,*	ZETTERSTEDT; Resa i Lappm, vol. i, p. 107.
Hypocentor rusticus,	CABANIS.
Bruant rustique,	OF THE FRENCH.
Feldammer,	OF THE GERMANS.
Zigolo di Mitilene,	SAVI.
Le Mitilene de Provence,	BUFFON.

Specific Characters.—Region of the rump russet; primaries bordered with russet, the first longer or as long as the third, the fourth shorter than the third; a large elongated white spot on the two external tail feathers; beak straight, awl-shaped, and slightly elevated at the point. Length nearly five inches and two-fifths.—DEGLAND.

THERE has been some confusion among the synonymes of this bird. Bonaparte has made three species, namely, —*E. rustica*, Pallas, *E. lesbia*, Gmelin, and *E. provincialis*, Gmelin. Schlegel makes only two of the three, namely,—*E. rustica* and *E. fucata*, including among the synonymes of the latter, both *E. lesbia* and *E. provincialis*, and in a note, page 83, he remarks,—"This pretty species differs from *E. rustica*, by the beak, which is more curved, and the feet, which are more robust; the beak of *E. rustica* is straight and awl-shaped, absolutely like that of *E. pusilla*. In winter, and when they are young, *E. fucata* and *E. rustica* resemble each other very much in the plumage." Gould figures *E. lesbia* and *E. rustica*. Temminck describes *E. rustica*, but he also introduces *E. lesbia* as the *Mitilene de Provence* of Buffon, and *E. provincialis* as the *Bruant Gavoué* of Buffon. Degland follows Schlegel.

It appears that amidst all this confusion there are two species as described by Schlegel, namely, *E. rustica* and *E. fucata*, but that there is really no authority for the introduction of the latter bird into the European list. To clear up the matter, I placed myself in communication with the best ornithologists in Europe, and I will here insert at length a letter with which I have been kindly favoured by Professor Blasius, of Brunswick, whose great knowledge of European birds gives a high value to his opinion upon the subject.

"Brunswick, Jan. 12th., 1861.

"Sir,—It seems to me that confusion among the species of the genus *Emberiza* is greater than in any other family of Passerines. The distinct species which are known to me as European, are as follow:—

1.—*Emberiza striolata*, Lichtenstein. In Africa, ac-

cidentally in Spain. One individual, from the south of France, is in the collection at Vienna.

2.—*E. miliaria*, Europe, *E. Caspia*, Menetries. From the original types at St. Petersburgh.

3.—*E. melanocephala*, Scopoli. Southern Europe. ♀ *E. granitivora*, Menetries. From the original type at St. Petersburgh. ♀ *Euspiza dolychonica*, Bonaparte. From the original drawings of Bonaparte. N.B.—*E. icterina*, Eversmann. Asia. Bonaparte gives this as European without adducing any proof.

4.—*E. aureola*, Pallas. North of Europe—North of Russia.

5.—*E. citrinella*, Linnæus. Europe.

6.—*E. cirlus*, Linnæus. South of Europe.

7.—*E. hortulanus*, Linnæus. Europe. (*b*,) Southern Russia *E. cæsia*, Cretzschmaer.

8.—*E. chrysophrys*, Pallas. Northern Asia. Accidentally at Lisle.

9.—*E. cia*, Linnæus. South of Europe. (*b*,) Eastern Russia *E. cioides*, Brandt; *E. ciopsis*, Bonaparte. N.B.—Bonaparte gives this variety of *E. cia* as European, without producing any proof.

10.—*E. rustica*, Pallas. North of Russia, and Boreal Asia. *E. borealis*, Zetterstedt; *E. lesbia*, Calvi and Savi; *Mytilene de Provence*, Buffon, pl. enl.

11.—*E. pusilla*, Pallas. Boreal Russia and Asia.

12.—*E. pityornus*, Pallas. Asia. Accidentally in East of Europe—Greece.

13.—*E. schæniculus*, Linnæus. Europe. *E. Pallasii*, Cabanis, original type; *E. intermedia*, Michahelles; *E. provincialis*, Gmelin, Bonaparte; *Gavoué de Provence*, Buffon, pl. enl. (*b*,) *E. pyrrhuloides*, Pallas. South of Europe. *E. palustris*, Savi.

The two species, *E. rustica*, Pallas, and *E. pusilla*,

Pallas, are perfectly distinct and unmistakeable. They both live and nest in the forests of Northern Russia, for instance, in the neighbourhood of Archangel. *E. rustica* is also found in Lapland. There are correct figures of the two species in the Appendix to Naumann, 'Vogel Deutschlands,' vol. xiii, pl. 388. These figures were taken from individuals which I killed myself in the north of Russia, in the neighbourhood of Nidjing-Wiliki; the two species have also been taken in the Island of Heligoland, and in the middle of Germany.

It is very difficult to interpret correctly Buffon's figures, pl. enl. 656, figs. 1 and 2. *Le Gavoué de Provence*, p. enl. 656, fig. 1, has the beak, and is nearly of the same colour as *E. schæniculus var. intermedia*, Michahelles; but the figure is the type of *E. provincialis*, Gmelin, and is also the *E. durrazzi*, Bonaparte, that is to say *E. schæniculus*, Linnæus. I think that is all that can be said of this question, nearly lost to European ornithology.

La Mitilene de Provence is perhaps, and will probably be *(est peut etre et elle sera probablement)* an imperfect representation of *E. rustica*, Pall ♀ (Buffon, pl. enl. 656, fig. 2.) The form and contour of the beak, and the colour of the plumage, are characteristic of *E. rustica;* but Temminck's description, Man. d'Orn., iii, p. 235, is perhaps a phantom of *E. fucata*, Pallas. This is the reason why *E. fucata* has been considered a European species, but it is a very uncertain supposition, and a presumption made upon insufficient data. I think it possible that Temminck wrote his description of *E. lesbia*, Man., i, p. 317, from Buffon's figure.

The two species, *E. rustica* and *pusilla*, Pallas, live regularly in the north of Russia, and they have been taken many times in Central Europe; but *E. fucata*,

Pallas, has never been taken with certainty in Europe.

Accept the assurance, etc., etc.,

C. R. Bree, Esq., M.D. J. H. Blasius."

I think it will be allowed that the above letter from so good an authority, clears up much of the confusion which has been occasioned in the natural history of the Eurorean Buntings, by mistaking slight differences of plumage for specific distinctions.

From Dr. Schlegel, of Leyden, I have also received a long letter, from which I make the following extract: —"The question of the synonymes of the Asiatic *Emberiza* killed in Europe is a very difficult one. I think it is almost impossible to state which species are meant by Buffon, but I believe that all the Asiatic *Emberizæ* caught in Southern Europe belong either to *rustica* or *pusilla*, two species breeding as you know in Northern Russia, and visiting in small numbers the east of Europe.

Emberiza fucata I believe now has never yet been observed in Europe: it is a species of Eastern Siberia and Japan, and very well characterized by its long Lark-like claws. I am also quite sure that the female and young of *E. Schæniculus* have often been confounded with one or the other of those species, although easily distinguished by its longer tail."

The Rustic Bunting is, as has been stated in the above letter, an inhabitant of Northern Russia. It is mentioned by Middendorff as occurring in Siberia, and Temminck states that it has been observed in the Crimea. It has also been taken accidentally near Marseilles, one individual having been captured there alive, and kept in a cage for two years, by M. Barthelemy, the curator of the museum of natural history in that town. This gentleman, as quoted by

M. Crespon, informs us that it is in its disposition lively and gay, that its cry resembles that of its congeners, 'zir-zir,' and that its song, which it kept up in 1838, from April to the end of October, had some resemblance to that of the *Fauvette à tete noire.* Its plumage became rather paler at the autumn moult.

It was fed upon millet and hemp seed.

In Bädcker's work I find the following notice:—"It is a north-dwelling bird, which comes plentifully into Siberia, and rarely into Lapland, and builds in bushes. Its nest is similar to that of the Reed Bunting. It lays five eggs, which are somewhat smaller than those of the Reed Bunting. The ground colour is brownish grey, with violet grey spots, veined, and streaked, and clouded with chesnut brown."

"The male in breeding plumage," according to Degland, whose descriptions are always accurate, "has the top of the head black, with a longitudinal band of russet white upon the median line, which terminates at the occiput in a small white spot; nape red russet; back, scapularies, and upper tail coverts, marked with black spots, which are edged with reddish russet; throat, front of neck, and middle and lower part of abdomen of a pure white; this colour is surrounded on the neck by a blackish streak, and a large collar of red russet, which embraces the upper part of the chest; flanks with long spots of the same colour; under tail coverts white, with some brownish spots; large superciliary band of pure white, which is lost in the white spot on the occiput; wings like the scapularies, and barred with white; tail brown black, with the two median quills bordered with russet, and the two outermost on each side marked in their length with a white band, the smallest on the second."

"In autumn they should have, according to Temminck, the black feathers of the vertex edged with brown, and the median band of the same tint; on the sides and lower part of the neck is a row of small brown spots only."

Pallas's description is the following:—"Head black, with three white bands, one in the middle of the vertex, the two others above the eyes in the form of eyebrows; neck and bend of the wing ferruginous; upper part of the body of a brown and russet tint; under parts white, with some russet spots on the neck; external tail feather on each side has a longitudinal and oblique white spot towards the tip."

My figure is taken from Gould. The egg is from Bädeker.

The bird has also been figured by Buffon, pl. enl. 656, fig. 2, male; Roux, Ornith. Prov., pl. 109, fig. 1, young, fig. 2, adult; Naumann, Vogel Deutsch, Appendix, vol. xiii, pl. 388; Gould, Birds of Europe, pl. 177; Nilsson, Faun. Laponica, pl. 131, female.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus EMBERIZA. *(Linnæus.)*

YELLOW-HEADED BUNTING.

Emberiza aureola.

Emberiza aureola,	PALLAS ET AUCT.
" *Sibirica,*	EVERSMANN.
" *Selysii,*	VERANY.
Euspiza aureola,	BONAPARTE.
Passerina collaris,	VIEILLOT.
Hypocenter aureola,	CABANIS. BREHM.
Bruant auréole,	OF THE FRENCH.
Kragenammer,	OF THE GERMANS.

Specific Characters.—Occiput and rump rich chesnut brown; the first two primaries of equal length, and longer than the third; an elongated white mark on the inner web of outermost tail feather. Length five inches; carpus to tip three inches; tail two inches and a half; beak from gape two-fifths of an inch; tarsus seven-tenths of an inch.

THE Yellow-breasted Bunting of the Arctic Zoology and Latham is one of those northern species, especially noticed by Pallas, which have a common habitat along the borders of the two continents of Europe and Asia. It ranges from the Ural mountains to Kamtschatka, and

is recorded by Temminck and Degland as having been seen during its migration in the Crimea. I do not, however, find any notice of its occurrence there by Dr. Carte or Captains Blakiston and Irby. Latham says it inhabits the pine forests of Katherinesburg, and that it is not met with on the poplars and willows in the islands of the Irtish and other rivers in Siberia. Middendorff notices its occurrence in his Siberische Reise; and Brehm, in his description of eggs in Bädeker's work, has the following notice:—

"This pretty little Bunting dwells among the bushes which overgrow the low meadow land of Siberia, from the Ural to Kamtschatka. It builds an half-globular nest away from the ground, of sedges, grasses, or rushes, and lines its inside with feathers and hairs. It lays five eggs of a very pretty short oval shape, the ground-work of which is greyish green, with grey and blackish veins, black brown bordered points, having round spots marked upon them." In the plate to which the notice refers, four varieties are figured, from which I have selected two. Middendorff also figures the egg. His drawing resembles most the lighter of the two varieties in my plate.

The male has the top of the head a rich maroon, and the rump is of the same colour, though more mottled; back and wings are brown, shaded with longitudinal patches of a darker tint; the upper tail feathers are brown; those round the base of the neck and cheeks deep black; throat and chest canary yellow, being separated by a band forming a half-circle of the same rich maroon which marks the top of the head; abdomen and flanks light yellow; under tail coverts white; primaries and secondaries the same uniform brown as the tail; tertials darker brown, edged with rufous; the

outermost tail feathers only have a slight white patch on the inner web; beak brown above, yellow below; feet brown.

According to Degland the female has the vertex and crop maroon; nape and mantle dull brown, with longitudinal black spots; face blackish grey; the maroon band on the neck very narrow; flanks shaded with olive, and marked with large brown spots; the feathers about the carpus whitish grey.

My figure is taken from a Siberian specimen sent to me by the Rev. H. B. Tristram. It has also been figured by Gould, but the drawing represents too large a bird.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus EMBERIZA. *(Linnæus.)*

YELLOW-BROWED BUNTING.

Emberiza chrysophrys.

Emberiza chrysophrys,	PALLAS; Zoog. Ross. Asiat., pl. 84, fig. 2.
" "	SELYS; Faune Belge., pl. 4, fig. 1.
" "	DEGLAND; Tableau des Ois. du Nord de la France, et Cat. des Ois. observés en Europe; (in the Memoirs of the Society of Sciences, Arts, and Agriculture of Lille, 1831—1845.) Orn. Eur., p. 249.
" "	SCHLEGEL; Revue.
" "	BONAPARTE; Consp. Avium Europearum.
Bruant à sourcils jaunes,	OF THE FRENCH.
Gelbbrauiger Ammer,	OF THE GERMANS.

Specific Characters.—A yellow superciliary band stretching beyond the auditory orifices; beak straight. First primary as long as the fourth. Tail very much notched; the most lateral feather nearly white, spotted with brown only on the upper part of the internal web, and the under part of the external web; the following quill edged with white outside. Length about six inches.

THIS bird is an inhabitant of the north-east of Asia, and is occasionally found in those parts of Northern Europe contiguous thereto. Its occurrence in Europe,

is, however, accidental. One specimen was shot in the neighbourhood of Lille, in France, and is preserved in the museum of that town.

Of the propagation and habits of this species I am sorry that I cannot refer to any authentic details.

The following description is from Degland:—"The male has the top of the head black, with a longitudinal white line along the middle, which mingles behind with a kind of half collar of the same colour; a large and long citron yellow band above each eye; upper parts of the body ferruginous brownish grey, darker in the middle of the feathers, which are russet on their borders; inferior parts grey white on the neck, with a kind of breast-plate on the crop of brown and russet feathers; the abdomen pure grey white, with small spots of brown at the base of the crop and on the flanks; primaries brownish, bordered with russet outside. Tail quills brown, three-quarters of the most external white, with the end brown outside; the two next to the external have the distal half white. Beak and feet brownish; iris brown."

It has been figured by Pallas, and by De Selys, in the Faune Belge, (1842,) vol. i, pl. 4, fig. 1.

LITTLE BUNTING.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus EMBERIZA. *(Linnæus.)*

LITTLE BUNTING.

Emberiza pusilla.

Emberiza pusilla,	PALLAS; Voy., 1776, Zoog., 42, No. 206.
" "	GMELIN; Syst., 1788.
" "	SCHLEGEL; Revue, 1844.
" "	DEGLAND; Ornith. Eur., 1849.
" "	BONAPARTE; Consp. Avium Eur., 1850.
Bruant Nain,	OF THE FRENCH.
Zwergammer,	OF THE GERMANS.

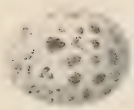
Specific Characters.—Occiput, cheeks, and part of throat ferruginous, with two distinct, deep black, irregular bands, extending from the base of the upper mandible over each eye, to the nape, where they turn round, and in some specimens form a more or less complete collar round the neck, mingled with white or fawn-colour; throat more or less white, mingled with the ferruginous colour of the occiput and cheeks; base of the inner web of most external tail feather white, that of the second the same, but only half as wide; first and third primaries of nearly equal length, the second the longest in the wing. Length of male five inches and three-tenths; carpus to tip three inches; tail two inches and a half; beak two-fifths of an inch; tarsus seven-tenths of an inch. Female a little less.

THE Little Bunting is the last of the closely-allied

forms which inhabit the northern parts of Russia and Eastern Siberia; and it will also close my list of this interesting genus. It lives and breeds in the neighbourhood of Archangel, and has been taken frequently, according to Blasius, in Central Europe. The specimen from which Schlegel drew his lengthened description in the Revue Critique, was captured in the neighbourhood of Leyden, on the 18th. of November, 1842. It is included by Professor Blasius and Herr Gätke among the birds found in Heligoland. It is said by Pallas to be very common in the Daouria, and is reported by Mr. R. Swinhoe, as occurring in occasional flocks in Amoy (China) during the winter.—(Ibis, vol. ii, p. 61.)

It is hardly necessary to enter into any discussion about the specific identity of this bird, after the very clear and convincing remarks of Professor Blasius, which I published in the notice of *E. rustica*. M. De Selys-Longchamps expressed a doubt, in a letter to Degland, about the identity of Schlegel's specimen with the bird described by Pallas, and referred it rather to the female of *E. fucata*. Upon this Degland remarks:—"Having seen in the museum of Leyden, the *Emberiza pusilla* of M. Schlegel, I cannot, with my distinguished friend, refer it to *E. fucata;* it has not the same kind of beak. This organ, instead of being convex above, and a little bent, is straight and awl-shaped, pointed, and slightly reversed at its tip. Its plumage is decidedly different."

Bonaparte, in his "Conspectus of European Birds," says of this species:—"It is a good species of Siberia, which has been taken accidentally even in Italy; that of Schlegel is the true one, and neither of the two figures in my Italian fauna ought to be referred to it."



LITTLE BUNTING.

Its habits are no doubt similar to those of the closely-allied species which inhabit the northern localities, but I am not able to add anything authoritatively upon the subject.

By the kindness of M. Verreaux, of Paris, I have been favoured with a series of four specimens of this bird, three marked Europe, and one "*Mer d' Ochotysk*, ♀, ?" I have figured this last specimen, and the male in breeding plumage. The other two specimens are only distinguished by the less amount of russet on the throat in one, and its absence in the other, which I presume represent the more or less perfect winter plumage.

The male in breeding plumage has the top of the head, cheeks, and throat rich russet red, with a broad black band stretching from the base of the beak over each eye to the occiput, where it joins a collar of cream-colour, which passes entirely round the base of the neck. Upper parts of the body dark brown, mingled with light russet, so as to shew a mottled appearance of those colours on the back, with the broad tertials nearly brown black; primaries rich hair brown, with their tips tinged with russet, and the outer web lightly edged with cream-colour; secondaries same colour, edged with a band of russet externally; rump greyish brown. Tail brown, the most external quill nearly all white, the second having a wedge-shaped band of that colour on the base of the broad inner web, the base of the wedge being at the distal end of the feather. Crop and flanks cream-colour, thickly covered with longitudinal marks of black brown; abdomen grey white; under tail coverts cream-colour.

Schlegel describes the beak of a blackish horn-colour,

shading off into yellowish upon the edges of the mandibles, and the base of the lower; feet and claws slender, and of a pale yellowish horn-colour; claws pointed, rather bent in, and of a pale blackish horn-colour.

The bird marked by M. Verreaux ♀, ? No. 23653, is smaller than the male, but does not differ from it in plumage essentially, except in the absence of russet on the throat, the more uniform greyish white, and the fewer spots of the inferior parts. The colours are altogether less clear.

My figure of the egg is taken from Middendorff.

The bird has been figured in Naumann's Appendix.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus Pyrrhula. *(Brisson.)*

Generic Characters.—Beak short, conico-convex, and thick at the base, the sides inflated and bulging; upper mandible convex, deflected at the tip, and overhanging the lower one more or less. Nostrils basal, lateral, round, and for the most part concealed by bristly feathers at the base of the bill. Tarsus shorter than the middle toe; toes entirely divided. Wings short; the first three primaries tapering, the fourth the longest in the wing. Tail of moderate length, slightly rounded, or square.

SCARLET BULLFINCH.

Pyrrhula erythrina.

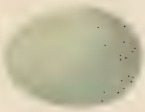
Pyrrhula erythrina,	Temminck.
Loxia erythrina,	Pallas. Gmelin.
Erythrospiza erythrina,	Bonaparte.
Carpodacus erythrinus,	Gray. Kemp. Bonaparte.
" "	Dubois.
Pyrrhulinota rosæcolor,	
rosea et erythrina,	Hodgson.
Erythrothorax rubifrons,	Brehm.
Loxia cardinalis,	Beseke nec Linnæus.
" *obscura,*	Gmelin. ♀
Fringilla flammea,	Retzius.
Pyrrhula Sinaica,	Mühle; Orn. Griech.
Bouvreuil Cramoisi,	Of the French.
Brand Rosengimpel,	Of the Germans.

Specific Characters.—Rump red or ash-coloured; abdomen pure white. The first primary equal in length to the third, and shorter than the second. Length five inches and a half; carpus to tip three inches and a half; expanse of wing ten to eleven inches; the closed wing reaches to two inches and a half of the length of the tail; tarsus nine to ten lines; middle toe seven lines, and its claw three lines; hinder toe four lines, and its claw three lines.—NAUMANN.

THE Bullfinches are a beautiful race of birds, and how much soever our own British species is valued for this quality in our eyes, it is perhaps surpassed by the subjects of the present and following notice.

The Scarlet Bullfinch inhabits the regions of the arctic circle, in the north of Europe and Asia. It is found in Sweden, Finland, Russia, and Siberia, more particularly near the Rivers Volga, Samara, Oder, and Selenga. It occurs solitarily in Courland and in Poland; and Naumann especially mentions having found it in the summer of 1819, on Sylt, one of the islands on the west coast of Jutland. It occurs accidentally in France, Belgium, Switzerland, Italy, and Central Germany, and has been captured at Hesse, on the Rhine. Degland mentions that individuals have been shot at Abbeville, at Tournai, in the neighbourhood of Milan, and on the Swiss Alps; and Nordmann tells us, in the "Faune Pontique," that it comes regularly in spring into the Botanic Gardens at Odessa, either singly or in pairs, and that it is common in the provinces situated to the east of the Black Sea. It is mentioned by Count Mühle as occurring in Greece, under the name of *Pyrrhula Sinaica*.

During the summer it is essentially a northern bird, but in the autumn it migrates southwards. If it stays the winter, it is found more especially in the neigh-



SCARLET BULLFINCH.

bourhood of dwellings, where it can be sheltered among the shrubs. It is very fond of moist situations, and is frequently found among the bushes on the banks of rivers, lakes, and ponds, where it may be seen on the willows or reeds.

Naumann has given a very complete account of the bird, from which I have gathered the following:—"For several years, in the early spring, a pair of these birds were seen near Breslau, among the willows and reeds of a swampy district. The male and female were always near together, and the former sung gaily. They were both killed at a single shot, but the female was not found. The male is now in the museum at Berlin. Later another pair were also shot.

"This bird does not, according to my observation, like large thick woods. I have seen it where there was none at all, namely, at Sylt, in Jutland. In one part of this island there are no other species of trees but small thorn bushes.

"In the northern narrow part of the island, where, between high sand downs, a narrow creek runs into the land, is a little thicket surrounded by a low earthen wall, in which is the renowned duck decoy. The ponds, canals, and the decoy man's house are all surrounded by alder trees and thorn bushes. There is also a thick reed-bank, about ten feet high, which is all the protection that the neighbouring downs receive from the devastating north-west storms. Altogether it is not more than a hundred paces in circuit. The wood is quite stunted, yet it is, for such a neighbourhood, a very interesting spot; and for me it became still more so when I myself met with a Scarlet Bullfinch, which I had never seen before in its free

state. The male came to within fifteen paces, into a thorn bush, and sang. It allowed itself to be observed freely, without any marks of fear. The female was not to be seen, nor the young, which had already (June 7th.,) left the nest. The old decoy man, who chiefly dwelt there, knew of the nest, and took me to it, assuring me that these birds had for many years bred there, and that they were not rare in the island. That they also bred in the elder and meadow thorn bushes near the house, and were pleasant-singing cage-birds. After much seeking we found no more, but we discovered the Common Linnet, for which they may probably have been mistaken by the decoy man."

"The Scarlet Bullfinch is very confiding towards man, being not at all shy. The singing male remains in the open, like the Linnet, upon the points or tips of bushes, and flys away like a shot when disturbed. Its call is a clear, piping, high tone, similar to 'ticke, ticke, tuk,' twice repeated in a clear and perceptible manner. When a part of the song has been uttered, as far as my observation extends, the whole tone is varied into a longish cadence."

"When with my friends Von Woldicke and Boie I last approached this celebrated decoy, at Sylt, I heard the song at a considerable distance, and I drew their attention to it, that there might be no mistake. The resemblance of the song to some of the notes of the Reed Bunting, as well as those of the Linnet, is a remarkable fact. Both these latter birds live in its neighbourhood. It is a very agreeable, loud, long, and, with many slight pauses, unbroken song; and it is so characteristic, that an ear like mine, which from earliest youth has been accustomed to observe the song of birds, can distinguish it in the far distance. In a

neighbourhood where little can escape the eye, the beautifully-plumaged songster was easily recognised, and, as we did not like to shoot it, we placed ourselves at a short distance, where, unseen, we were able to observe it for a considerable time. It may be an agreeable cage-bird, but in confinement the red plumage turns into a permanent yellowish green."

The Scarlet Bullfinch lives upon various kinds of seeds, more especially, according to Dubois, those of an oily nature, as well as those of the elm or alder. Naumann also suggests that it feeds upon the seeds of the reeds, among which it likes to live. The same authority informs us that it nests among the woody plantations in the neighbourhood of St. Petersburg.

The nest is formed of wool, dry grass stalks, and twigs, and lined with feathers and horse-hair. It lays five or six eggs, light green, spotted at the larger end with small black dots.

Brehm, in Bädeker's work upon European eggs, has the following notice of the nidification of this bird:—"They nest in the thick woods and bushes of Siberia, in Lausatia, in the neighbourhood of Galitz, in Galicia, and in Poland—near Warsaw, where it is found in swampy situations overgrown with alder trees. Once, in June, it was met with, paired, in Renthendorf. The nest is placed in a bush, and is made of moss, sticks, dry twigs, and sheep's wool, and is lined with hair and wool. The eggs are a lively blue green in colour, more or less marked with black or brownish dots and spots on the larger end. They are inclined to pear-shape in form, without, like the other Bullfinches, being swollen in the middle."

The male in breeding plumage has the small feathers in the nostrils and around the neck, of a dull rose-

colour; the base of all the feathers, as well as a narrow streak along the shafts, of a brown red; rump, sides of the head, throat, front of neck, and chest, of a bright or rose crimson; belly and abdomen of a pure white; back and wing coverts ashy brown, tinged with a little red towards the extremity or tips of the feathers; quill feathers of both wings and tail blackish brown, bordered with reddish; tail forked, beak and feet brown.

The female has all the upper parts of an ashy brown, with large longitudinal spots of a darker brown; throat and cheeks regularly spotted with white and brown; front of neck and all the under parts of a pure white, marked with large longitudinal spots of dark brown; middle of belly without spots. It is stated that the male adopts in winter the plumage of the female.—(Temminck.)

The young males are not red in the first year; they have a remote similarity to the female of our Linnets, but are distinguished from them by having more of a greenish tint pervading the whole plumage, especially through the yellowish borders of the wing feathers; the head, under part of the neck, back, and shoulders, as well as the wing coverts, are brown grey, but something brighter on the borders of those feathers which are of a greenish colour; rump dirty yellow green; the dirty white throat has down its sides small brownish feathers, which become larger on the upper part of the breast, where the ground is also brownish, but on the sides is shaded into brownish grey; belly and under wing feathers dirty white, without spots; the dark brown wing feathers have on the outer side a yellow greenish bordering, which makes them brighter; beak and feet are like those of the old male, but of

a brighter colour, namely a dirty yellowish or brown yellowish flesh-colour, the tips of the claws being dark brown.—(Naumann.)

In the first part of the Bulletin of the Imperial Society of Naturalists of Moscow, for the year 1860, there is an article by Alexander Von Nordmann, upon the birds of Finland and Lapland, in which he states that *P. erythrina* is very common in Southern Finland, which was not the case, according to the testimony of his father, thirty years ago. It builds every year in the Botanical Gardens at Helsingfors, in the tops of the maple and *Carangana Sibirica*. It arrives at Helsingfors in the middle of May, and the young are fledged by the 25th. of June. The nest is made loosely of twigs. The eggs are white, with a few blackish red spots at the large end. The voice of the bird is loud and flute-like, easily recognised again when once heard. It has a call-cry similar to our Greenfinch.—(See "Ibis," January, 1861, p. 111.)

The figure of my bird is from Naumann. The egg is from Bädeker.

The bird has also been figured by Gould, B. of E., pl. 206; Dubois, Oiseaux de la Belgique, pl. 117, (male and female;) Naumann, Natur. der Vogel Deutsch., pl. 113, (male and female.)

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus PYRRHULA. *(Brisson.)*

ROSY BULLFINCH.

Pyrrhula rosea.

Pyrrhula rosea,	TEMMINCK.
Passer roseus,	PALLAS.
Fringilla rosea,	OF AUTHORS.
Carpodacus roseus,	KAUP. BONAPARTE.
Bouvreuil-rose Pallas,	OF THE FRENCH.
Sibirischer Rosengimpel,	OF THE GERMANS.

Specific Characters.—The vertex red, with silver-white spots; throat also mottled with crimson and white; rump crimson or yellowish white; two transverse bands of white across the wings. Length five inches and a half, French, (Temminck,) six inches and a half, German, (Naumann;) expanse of wings eleven inches and a half; length of somewhat notched and forked tail two inches and five-eighths. The wing does not reach to half the length of the tail; the club-shaped beak five and a half lines; tarsus three-quarters of an inch; middle toe and claw seven lines; hinder toe and claw rather over six lines; leg and toes covered with scales.—(NAUMANN.)

THE Rosy Bullfinch is described by Naumann as the most beautiful of our Northern European birds. Closely allied to the last species, it yet differs from it in size and ornamentation. Its beak is quite dif-

ferent, being narrower and more pointed, having more the character of that of the true Finches. The measurements also of the two species, which I have taken from Naumann, shew very important structural differences.

The Rosy Bullfinch is found in Northern Asia, principally in Siberia—on the banks of the rivers Uda, Selenga, etc., visiting in the winter the eastern parts of the south of Europe, and occasionally it has been captured in Hungary. It has also, but very rarely, been seen in the north-east of Germany; and it is not improbable that it is there, but has escaped observation. It has also been included by Professor Blasius among the list of birds captured in Heligoland.

Very little is known of the natural history of this bird. This may in a great measure arise from its being very frequently mistaken for the last. Pallas says, however, that it is rare even in Siberia. Naumann senior saw it free once only, and then was not acquainted with its name for several years after. Temminck, in the first edition of his "Manual," confounded it with the Scarlet Bullfinch.

The Rosy Bullfinch likes to live in bushes which grow near water, and occasionally comes into gardens, accompanied by the Snow Bunting. It feeds upon all common seeds, according to Naumann, and on the kernels of various berries. About its propagation nothing is known.

The adult male has the forehead and throat of a silvery and shining white; vertex, neck, and body of a very bright crimson red, with the feathers of the back and scapularies black in the centre; two bands of a rosy white on the wings, of which the coverts are edged with dirty white; cheeks, lower part and

sides of neck, and chest, crimson red; belly and under tail coverts rosy white; primaries and tail quills brown, edged with rose on the outside; beak and feet clear brown.

In the young before the first moult the entire plumage is of a reddish grey, longitudinally spotted with brown; with two bands of reddish yellow on the wing, and the rump yellowish. After the first moult a little white appears on the forehead, and the red becomes more brilliant while the spots disappear: thus the specimen described by Pallas as having white only on the forehead, and with its plumage browner, must have been a young bird after moulting.—(Temminck.)

The following is from Naumann's account of this bird, which I insert to make my description as complete as possible. I quote from the above accurate observer's beautiful work on the "Birds of Germany," a work, which I may take this opportunity of saying, is, in my opinion, both for full and elaborate description, and for the beauty and natural expression of its illustrations, perhaps unrivalled in ornithological literature. —"The size is that of a Mountain Finch, and larger than the Common Linnet, but in contour it somewhat resembles them both. The beak is reddish grey, the root of the superior mandible being yellowish; the round nostrils are ornamented with stiff small feathers, and the iris is rust brown. The brownish yellow feet are tolerably strong and robust; the claws, not very large, but sharp, are dark brown at the tip, but have otherwise the colour of the feet.

"The old male has two distinct characters of plumage,—brown, and a splendid carmine red; and the last, with which the whole bird seems to be suffused, makes it one of the most beautiful of northern birds.

The head and neck are carmine red, with a brown grey sparkling through it, so that the feathers (like, in fact, those of the whole bird,) are more or less dark, having a ground of grey and white, and the red colouring only taking possession of the tips or edges of the feathers. On the temples, the hinder part of the head, the throat, to the middle of the breast, and the rump, this colouring is the brightest, a deep brilliant rose red; and on the sides of the breast dark brown arrow-shaped spots on a whitish ground, becoming larger on the flanks, with, on this part of the body, a yellow white tinge; the belly and under wing coverts are white, with rosy red borders. There is one peculiarity to be noticed, namely, that in this northern bird, as well as in the male of *Pyrrhula longicauda*, Temminck, which is the *Loxia Sibirica* of Pallas, the feathers of the vertex and throat have a silvery scaly appearance, and the barbs of the feathers, as well as their points, have a bright shining white colour. The shoulders and upper part of the back are dark brown, spotted with red streaks; the dark brown feathers of this part have borders of carmine red; the greater feathers of the shoulders have also white borders. All the wing feathers have a dull dark brown ground; the lesser wing feathers carmine red borders, the greater, broad white borders, with rosy red tips. The greater wing coverts rosy red borders with white tips, forming two oblique borders of white across the wings. The upper tail coverts bright red, with dark brown arrow-spots, and the darker brown tail feathers, of which the outermost are merely somewhat lighter, have rosy red borders; the underneath wing and tail feathers are light brown grey; the under wing coverts dirty white, spotted with brown, having, at the edges, a tinge of rosy red.

"In the autumn plumage, the borders of the wing and tail feathers are broader, shading into a brownish white, and in the back and shoulder the red bordered feathers have besides brownish white edges. The splendid red is there also darker, and acquires its brilliancy by degrees under the influence of air and sun.

Probably the young male is not so beautifully red, and in the first year perhaps not at all so as in the preceding species, *(P. erythrina,)* and the females of both are certainly very similar. I have only seen two male stuffed specimens of this splendid bird to examine and compare with *P. erythrina* and *P. purpurea*, the *Bouvreil violet de la Caroline* of Brisson."

It has also been figured by Gould, B. of E., 207.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus PYRRHULA. *(Brisson.)*

DESERT TRUMPETER BULLFINCH.

Pyrrhula githaginea.

Pyrrhula githaginea,	TEMMINCK ROUX.
" "	BOLLE; Naumannia, 1858, p. 369.
" *payreaudaei,*	AUDOUIN; Descr. Egypt. Zool.
Fringilla githaginea,	LICHTENSTEIN.
" *thebaica,*	HEMPRICH; Sched. Mus. Berolin.
Erythrospiza githaginea,	BONAPARTE.
Carpodacus payreaudaei,	GRAY; Gen. of Birds.
Bucanetes githaginea,	CABANIS; Mus. Hein., p. 164.
Serinus "	GLOGER.
Erythrothorax githaginea,	CHR. L. BREHM.
Bouvreuil-rose "	OF THE FRENCH.
Trompeter gimpel,	CABANIS.
Papageien "	C. L. BREHM.
Rosen "	A. BREHM.
Egyptscher rosen-gimpel,	SCHLEGEL.

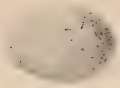
Specific Characters.—The small feathers all round the base of the beak rose carmine; rump, external borders of the primaries and abdomen a most delicately beautiful rose pink; no transverse bands across the wings; the first quill feather the longest in the

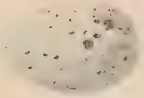
wing. Length five inches and a half; from carpus to tip three inches and three-eighths; the tip of the wing reaching, when closed, within one-third of an inch of the end of the tail. Tail two inches and three-eighths long; tarsus three-quarters of an inch; beak from gape five-eighths of an inch; height of beak five-twelfths of an inch; circumference of beak at base one inch.

This elegant bird is a native of Africa, and has only been known to occur in Europe with certainty in Provence, Tuscany, and the Grecian Archipelago. It is found however at Malta, the bird figured in the "Icones Fauna Italica," having been captured there. It is seen in the island from December to March, and its designation "The Trumpeter," is derived from its Maltese name "Trumbettier." It is mentioned by Captain Loche among the birds observed by him in Algeria, and is especially found in Nubia and Syria. A long and interesting account of its residence and habits in the Canary Islands, from which the following history is principally taken, is given by Dr. C. Bolle, in "Naumannia," for 1858, pp. 369-393; and in Cabanis' "Journal fur Ornithologie," for 1859, p. 469, a further account of it is given by Chalihl Effendi, as it was found by him in the desert regions of the north-east of Africa, on the banks of the Nile, in Upper Egypt, in the oases of Nubia, where it occurs in large flocks, and in Arabia Petrea.

Dr. C. Bolle's monograph is a model of this kind of descriptive natural history, going into full particulars of all the habits and nidification of a most interesting bird, hitherto generally dismissed by authors with the brief remark, "*Ses mœurs, ses habitudes, son regime et sa propagatiou sont inconnus.*"

In the early part of his account, Dr. Bolle reprobates the system of name-making in modern days; the present





bird being classed by various authors as an *Emberiza*, a *Fringilla*, *Pyrrhula*, *Carpodacus*, *Erythrospiza*, *Erythrothorax*, *Serinus*, or *Bucanetes!*

I have preferred, however, keeping it where it is placed by its structural affinities in the genus *Pyrrhula*. It may be considered as the ground and desert type of that genus, not far removed from the two preceding species.

It is truly, as Dr. Bolle remarks, a bird of the Sahara. He writes about it as follows:—"Far beyond the other side of the fruitful coast-line of North Africa, which borders southwards the Mediterranean Sea, the cultivated fields of the Arabs are surrounded by a margin of desert, where a new unexplored kingdom, with a scanty but strange world of plants and animals, comes into view. Silence, as of the grave, reigns supreme in the terrible Sahara, where the sea of sand has its waves agitated by the poisonous breath of the Simoon. Through this run the routes of the caravans, and its palm-shaded oases and wadis, which during the falls of winter are flooded with water, and are adorned with thickets of mimosæ and tamarisks."

It was in the two Canary Islands Lanzarote and Fuertaventura, which appear to have been divided from the Sahara by the sea, and bear the character of scenery above described, that Dr. Bolle found the Desert Trumpeter in great abundance, and where his observations upon its habits were made.

"Whoever," says Dr. Bolle, wishes to know the dwelling-place of *P. githaginea*, must not expect to follow me as when I described the wild Canary bird into the glades of the Hesperides, through hollows rich in flowers, and bordered with woods of laurel. The Fortunate Islands are in no way similar to the ever-

green colour in which they appear to travellers who pass these land-marks of navigation in the height of summer.

The Desert Trumpeter is found most plentifully in Lanzarote and Fuertaventura, and most sparingly in the great Canary Island. I found it in fact spread over the whole eastern part of the Canary Islands, and have reason to believe that it may inhabit the more western parts also.

On the 1st. of April, 1856, I found it in an excursion to Caldeca von Bandama, on the high-road which leads from Ciudad de las Palmas to the Vegas, and welcomed it joyfully as an old acquaintance one comes upon unexpectedly. It is seen, but less plentifully, in the neighbourhood of the principal town, but at the time of migration it appears in great numbers in the harbour, Puerta de la Luz. I have also observed it in the districts of Jinamar, Carrizal, and Juan Grande, and nowhere more abundantly than in Arguineguin, where it frequents in flocks the tombs and ruins of a town which at one time had been plundered by the Spaniards, which now covers a cape or promontory with rocks and grottoes, and fig-trees in the back ground, and commands an incomparable panorama over the sea towards the peak of Teneriffe.

It also breeds in the islands of the western group, since the thick growth of wood has driven it back there, but it has not been seen hitherto on Teneriffe, Gomera, Palma, or Ferro."

"The country inhabited by the Desert Trumpeter must above all things be without trees, and in the hot regions of the sunny coast. It prefers stony places, where in the noon-day the wind trembles over burning stones, and by the glimmer and reflected light of which the traveller is almost blinded. Only a little grass grows

in summer between the parched and bleached yellow stones; and here and there at wide intervals the low bushes of the taybayba, *(Euphorbia balsamifera,)* or the thorny prenanthes, only eaten by the dromedary, spring up. Here the Trumpeter lives—a Bullfinch with the manners of a Stonechat. It is always found in sociable little groups, when the cares of the breeding-season do not keep it solitary. The cheerful little bird dances from stone to stone, or glides about near the ground, but seldom can our sight follow it far into the landscape, for the reddish grey feathers of the old bird mix as closely with the colours of the stones and leafless stems and twigs of *Euphorbia*, as the isabelle of the young does with the pale yellow of the sand or chalk.

We should soon lose it if its voice, which is one of its most striking peculiarities, did not guide us to it. Listen! A note like that of a small trumpet trembles through the air, and vibrates continuously; and if we are very attentive we shall hear just before and just after it two gentle light notes ringing like silver bells through the still desert, or the almost imperceptible chords of an harmonium played by unseen hands. Again it changes, and this time its notes resemble the deep croak of the green frog of the Canaries, but less coarse, hastily repeated one after another, and which the little bird will itself answer with almost similar but weaker sounds, like a ventriloquist, as though they came from the far distance. Nothing is more difficult than to describe in language the notes of birds. They must be heard to be appreciated, and no one would expect to hear so remarkable a song from a bird in such a locality. The above trumpet-like tones often ending in a succession of crowing and humming, distinguishes the habitat

of these birds. They live almost so completely in the uninhabitable country around, that they are always joyfully welcome, and listened for attentively when silent. They are as the melancholy voices of the desert, or as the Djuns of the solitude. '*Vox clamantis in deserto.*'

The Desert Trumpeter does not appear frequently on the steep rocky hills, at least I have only once met with it in such a situation, and that was in April, 1852. It is much more partial to the black lava stream of the desert, which, full of gaping rents and chasms, hardly permits a blade of grass to become green. It never settles on a tree or bush, like the Stonechat. In inhabited districts they are rather shy, yet where, as in Handia and nearly all the south of Fuertaventura, the silence and solitude of the desert is unbroken, they are very confiding, especially the young, which, when we meet with them unexpectedly seated on a stone, will peer with their little brilliant eyes quite into one's face.

They feed entirely, or almost so, on the seeds either of grasses, which are found like a mealy kind of bread in their stomachs when killed, or the oily seeds of composite and cruciferous plants, which they shell like other finches, by moving them most carefully backwards and forwards between the mandibles of their strong beak. They will also eat tender young leaves. They cannot long dispense with water, and often must fly some miles daily to get it. Their presence in the desert is always a good omen for the thirsty traveller. I have constantly seen them flying to drink in flocks. They drink much at a time in long draughts, between which they lift up their heads. After drinking they are very fond of bathing. I have never seen them roll about in the dust like Sparrows. The breeding-time begins in March, and like those of most true desert birds, the

nest is well concealed, and with such foresight, that it can hardly ever be found.

I have never succeeded in discovering one, though I have many times sought in vain, as did Brehm in Egypt, who writes, 'In the month of March *P. githaginea* is in breeding-plumage, but I have never succeeded in discovering any more about it. The masses of rock on both sides of the Nile form a very favourable nesting-place, but they extend so much that the naturalist cannot pursue his object with any good result.'

I know, however, from the goatherds of Fuertaventura, that the Moros, as they are called there, build in crevices under large overhanging stones upon the ground. The nest has a tolerably strong texture, and is woven with the coarse straw of the desert grass, and lined within with great feathers, mostly of the ostrich and bustard, as well as the wool of the camel and hair of the goat. The number of eggs is from three to five. They certainly breed twice, if not more frequently. The second moult takes place in July. Individuals quite tired have been seen by fishermen flying over the arm of the sea and the islands of the coast. These journeys shew why it appears yearly in Malta as a bird of passage, as this island makes the direct line from the Western Sahara and Canary Islands to the deserts of the Syrte, bordering on the Mediterranean.

The Desert Trumpeter does not appear to have many enemies in its native home, as with the exception of the wild cat and a few stoats, it has no four-footed foes. The Horned Owl can scarcely find it under the flat stones, and in the cliffs which protect it. It has only to beware of the Kite, *(Milvus regalis.)*"

Dr. Bolle was a long time before he could keep them alive in confinement, but he at length succeeded, and

he gives a most interesting account of their habits. He says they are peaceful and gentle, very tame and sociable with each other, or with other birds. The male bird sings in the late autumn and winter. They love company, and constantly call to one another. He kept his birds in a room with plenty of light, and when the lamp was brought in they began their song. The tone is sometimes clear and beautiful, but with a short trumpet, or a prolonged drony or quaking sound, which appears to be the key-note of their song, and to which is often added various modulated tones, sometimes resembling the purring of a cat. The 'ka, ka, ka,' which they constantly repeat, answers, as a rule, one much deeper, softer, and shorter. Rarely they may be heard uttering a low chattering, like the little parrot; they will also cackle like the hen, 'kekek, kekeek,' three or four times in succession. Their alarm note is a loud 'schak, schaok.' When hunted and caught they shriek with anguish. Their notes are almost without exception so full and expressive, that we wonder how such a small creature can produce them. The female has not the trumpeting tone so loud as the male has in spring."

"In confinement the first egg was laid on the 24th. of April. They are four in number, rather large for the bird, pale sea-green, or lighter, with small spots and points of reddish brown, thinner at the smaller end, and forming at the larger end a kind of crown or wreath."

The male bird has the top of the head and nape ashy grey. The back more or less brownish ash-grey, with reddish edges to the feathers; the greater wing coverts, pale brownish, edged with rosy red; the primaries are a glossy hair-brown, with their outer edges fringed with rosy pink, their tips being bordered (the

first three slightly, the rest more broadly,) with creamy white; in the secondaries the outer border is the broadest, and the cream-colour is more deeply tinged with rosy pink; the tail is emarginate, and the feathers present the same deep brown colour, broadly edged with cream-colour and rosy red, as the wing feathers, so that when the wings are closed, they form, with the tail, a pleasing striped appearance. All the under parts (more or less,) the under tail coverts, feathers round the beak and rump are rosy red, mingled on the crop and abdomen with grey.

Dr. Bolle says that when old, the males have the scapularies speckled with red, and that this colour is much deeper on the back. In autumn the male is less beautiful,—the red is less remarkable, and the ashy grey above, changes into a dull grey brown, on which account, after moulting for the first time, they have a strongly marbled appearance. In this stage a reddish shade on the back is above all perceptible. The beak is a rosy coral colour, which Dr. Bolle says gives it in the distance the appearance of an exotic bird. Tarsi and feet rose; iris brownish black.

The female is above brownish grey, but that colour is lost in the clearer tints below, which from the throat downwards, become exclusively whitish. The upper part of the wings reddish grey. On the throat and immediately under the beak clear rose; tail rosy red; scapularies edged with rosy red. The greater wing coverts and tail feathers like the male, only smaller, and the rose less marked; under tail coverts pale reddish grey; feet paler rose than the male. No bands across the wings of either sex.

The plumage of the young differs somewhat from that of the adult. When it leaves the nest it is clear

light colour, or dull isabelle yellow, which Dr. Bolle says Degland wrongly ascribes to the female. This colour goes downwards from the throat without any streaks, and gradually blends into whitish; there is no trace of red, not even on the almost isabelle yellow tint. The under tail coverts are yellowish; greater and lesser wing coverts, wings, and tail have a darkish brown colour, with a speckled grey yellow on both edges; beak and feet flesh-colour. (Bolle.)

My figure of this bird is a male sent to me by Mr. Tristram, and marked "Biskara, 22nd. Jan., 1857." The egg is also from a specimen sent me by the same gentleman.

The bird has also been figured by Temminck et Laugier, planche color, 400, figs. 1 and 2; Roux, Ornith. Prov., vol. i., supp. plate 74, bis, young male in autumn plumage; Gould, B. of E., pl. 208.

The following have been by various authors admitted into the European list of the genus *Pyrrhula*:—

1.—*Pyrrhula coccinea*, Selys.—The Greater Bullfinch, (*Bouvreuil ponceau* of the French,) differs in nothing whatever from the Common Bullfinch except in size, and having rather more white on the rump, and the band of this colour across the wings being rather broader. We are informed by Dubois (Oiseaux de la Belgique, p. 125,) that it never mixes with the common species. It was first introduced as a distinct race by Vieillot, Dict., 1817, and after by M. Le Baron Selys-Longchamps, in his "Faune Belge." Schlegel, however, in his "Revue Critque," 1844, declined to admit it as a distinct species, having never seen it in nature. De Selys himself only considered it as a local race of the Common Bullfinch. Degland admits it into his "Ornithologie

Européenne," with the following remarks:—The size of the *Bouvreuil ponceau* is constantly larger than that of the common species; there is a difference in the proportions of their wing primaries, in the strength of their note, and it is certain that they always flock separately."

Bonaparte, who admits it into his "Conspectus Avium Europæarum," 1850, and in his "Critique," p. 27, makes the following remarks about it:—"I would not answer for this not being in reality a constant race or species, evidently that which Graba would have represented in his work upon northern birds."

Lastly, Dubois admits it as a distinct species, under the designation of *Pyrrhula coccinea*, Leisler, and remarks upon it:—"This bird is in many respects like the Waxen Chatterer, appearing only from time to time. Sometimes it is not seen for several years, and then shews itself in great numbers. These Bullfinches have their periodical migrations, and unite together sometimes in large, and at other times in small flocks before starting. They have been seen in Belgium in 1836, 1840, 1846, and 1850; but in the autumn of 1855, there was such a number taken, that they might have been bought by the dozen at the game-dealers. Our learned naturalist M. Le Baron Selys-Longchamps, had the honour of being the first to figure this bird in his "Faune Belge," and other naturalists have followed his example. This Bullfinch has been long known as the Great Bullfinch among bird-catchers. Naturalists have confounded it with the Common, although from its size it ought to form a separate species, and it is never known to join the Common Bullfinch when they assemble for their periodical migrations. It is distinguished by a more brilliant red and greater development of the white

mark on the rump. The species, according to all appearances, belongs to the north of Europe, but as it has always been confounded with the Common Bullfinch, it is not possible to assign it a fixed locality."

Such is the history of this bird. I see no reason whatever for constituting it a distinct species any more than for forming different species out of the varieties of *Parus palustris*, which Mr. A. Newton has shewn to present at least three different forms between this country and Lapland, but not sufficient to constitute specific difference. Having seen the birds I entirely agree in this opinion; and the rule which seems to obtain with most birds of exhibiting strongly marked and permanent climatic variation, must not be overlooked as it applies to the present one. Under any circumstances it is quite unnecessary that I should give a figure of this assumed species.

2.—*P. Longicauda*, Temminck, *P. Sibiricus*, Pallas.—This bird was stated by Temminck to have been captured in Hungary, and it is admitted into the European list by Keyserling and Blasius. It is however rejected by Schlegel, Degland, and Bonaparte. There does not appear any authentic account of its occurrence in Europe. It inhabits Eastern Siberia and the Altai mountains.

3.—*P. Caucasica*, Pallas, *Loxia rubicilla*, Guldenstadt, is admitted into the European list by Keyserling and Blasius, Schlegel, and Bonaparte. The latter says of it:—"The *Loxia rubicilla* of Guldenstadt is a *Carpodacus;* but it is much more strongly formed than *Erythrina*, with which in other respects it has less affinity than with *P. roseus*, which is also much smaller."

He then alludes to a female in the collection of M. De Selys, about the authenticity of which there is some doubt.

Degland also remarks of this bird, "This genus (*Coccothraustes*) was established by Brisson, and only includes our Hawfinch. The Count de Keyserling, Professor Blasius, and M. Schlegel place in this genus the *C. Caucasicus* of Pallas, *Loxia rubicilla*, Guldenstadt. But this bird was only known to the latter naturalist; it resembles in size, form, and coloration the Pine Bunting; it is not certain that it belongs to the genus *Coccothraustes*, and as it is only taken in the Caucasus, I do not include it in this catalogue, and must refer for a description to the "Revue" of M. Schlegel, p. 79."

This description is that of Guldenstadt, and is very clear and minute.

It appears to be intermediate between the Pine Bullfinch and the Hawfinch, of a soft red colour, variegated with white and grey. It is indigenous to the Caucasian Alps, delighting in the cold regions frequented by the Pine Bunting, especially the beds of gravelly rivers, where it feeds on the berries of the *Hippophoes rhamnoides*. It assembles in flocks, and imitates the notes of the Bullfinch. There is scarcely any difference in the sexes.

"The top of the head, throat, underneath the neck, and chest, intense red, marbled with white acutely triangular spots and streaks; abdomen and under tail coverts weak rose, watered with white; tail feathers below rosy-fuscous. Neck above and back greyish, with a rosy tinge; tail feathers above rosy-fuscous. The base of all the feathers which lie *in situ*, and which constitute the greater part of all the plumage is intensely grey. The closed wing is an inch shorter than the tail; the primaries and tail quills are fuscous, indistinctly margined with rose; the axillary feathers colour of the back. The tail is three inches and six lines long; the

twelve tail feathers brassy-black, the tip of each external margin white, the rest shaded with rose. The thighs are feathered to the knee, and grey; the tarsus and toes, of which there are three before and one behind, of a black colour, claws incurved, acuminate, black, equal anteriorly, the hind one longest. Length eight inches, of wings four inches nine lines, tarsus one inch one line, middle toe nine lines, hind toe five lines."

Figured by Guldenstadt, Nov. Comm. Petr. xix, pl. 12.

I have thought it right to give a translation of the principal part of Guldenstadt's diagnosis of this bird, and regret that I have not a specimen to figure, although confined as it is to neutral ground, its claims to European rank are very slight.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus FRINGILLA. *(Linnæus.)*

Generic Characters—Beak short, strong, convex, straight, and conic; superior mandible dilated, slightly bent at the point; the upper part depressed. Nostrils basal, round, placed near the forehead, behind the horny elevation of the swollen part of the beak, partly hid by the feathers of the forehead. Tarsi shorter than the middle toe. The two or three first wing primaries tapering, the third or fourth the longest.

CRIMSON-WINGED GROSBEAK.

Fringilla coccothraustes phœnicoptera.

Fringilla rhodoptera,	LICHTENSTEIN.
Montifringilla sanguinea,	GOULD.
Erythrospiza phœnicoptera et Rhodopechys phœnicoptera,	BONAPARTE.
Rhodopechys phœnicoptera,	CABANIS.
" *phœnicoptere,*	LOCHE.

Specific Characters.—Top of the head in the male black; the first two-thirds of the outer web of all the primaries, except the first, the feathers round the eyes, and the upper tail coverts, rich crimson. Length seven inches; carpus to tip four inches and three-tenths; tarsus ten lines; tail two inches and three-fifths; beak seven lines; circumference of beak at base one inch and a half.

This beautiful species is closely allied to the Desert Trumpeter, *Pyrrhula githaginea*. It has been included with it and *Fringilla obsoleta*, by Lichtenstein, in the genus *Erythrospiza*, in which arrangement he was followed by Bonaparte. Subsequently Cabanis placed this bird in a new genus, that of *Rhodopechys*, in which he was also followed by the versatile Prince of Canino. It differs, however, from the Bullfinches in the size and form of the beak, and belongs, I think, more strictly to the genus *Coccothraustes*, although here again the form of the wing is different.

Bonaparte says of it in his "Conspectus Avium Europearum." p. 28:—"This elegant *Erythrospiza phœnicoptera*, which does not differ from the *Fringilla sanguinea* of Gould, from the confines of Persia and Circassia, claims its place in the ornithology of Europe, which it can always ensure by a few movements of its wings. It is essentially sedentary, only changing from plains to mountains."

In addition to the above places, Erzeroum may be mentioned more particularly as a locality; in the neighbourhood of which place it is found in flocks of five or six. It occurs also in the southern parts of Africa.

In its habits it very much resembles *P. githaginea*, living among rocks and stones in the desert, and feeding upon seeds.

The male in breeding plumage has the top of the head black; the nape, back, scapularies, and wing coverts rich chesnut brown, cheeks, throat, and flanks, being a brown of a lighter shade. Wings black, with the first two-thirds of all the primaries, except the first, rich crimson, the secondaries being broadly tipped with very pure white; upper tail coverts crimson; tail black, with the exception of the most external on each

side, which are pure white; all the other quills more or less tipped with white. The feathers surrounding the eyes crimson; the crop and abdomen fawn-colour, with the feathers covering the thighs white; under parts of the wings at the shoulders bordered with crimson; the rest of the upper part white, below slaty brown; tail, when closed, white, being covered by the two external feathers. Feet brown; beak yellow.

The female has the upper part of the head brown, with all the other upper parts different shades of the same colour, only a slight vestige of the crimson colour of male being perceptible; the primaries and secondaries dark brown, the former slightly edged with crimson, and the latter tipped with dirty yellow. Throat, cheeks, crop, and flanks nutmeg brown; abdomen dirty-mottled white and brown.

The figures of this beautiful bird are from specimens kindly sent me by Mr. Gould. The male is from Erzeroum. The female was also shot in the breeding season.

GRANIVORÆ.

Family FRIGILLIDÆ. (Bonaparte.)

Genus FRINGILLA. *(Linnæus.)*

SERIN FINCH.

Fringilla serinus.

Fringilla serinus,	LINNÆUS. TEMMINCK.
Pyrrhula serinus,	SCHLEGEL. DEGLAND.
" "	KEYSERLING ET BLASIUS.
Serinus flavescens,	GOULD. BONAPARTE.
" *brumalis,*	STRICKLAND.
" *hortulanus,*	KOCH.
" *meridionalis et islandicus,*	BONAPARTE.
Serin Finch,	LATHAM; Syn., vol. iii, p. 296.
Serin cini,	OF THE FRENCH.
Gemeiner grüngimpel or girlitz,	OF THE GERMANS.
Verzellino,	SAVI.
Raperino, Verdolini,	
Serino d' Italia,	STOR.
Crespolino,	OF THE TUSCANS.

Specific Characters.—The back olivaceous, marked with longitudinal blackish spots; vertex pale olivaceous yellow; primaries and tail feathers dusky brown. Length four inches and a half; carpus to tip two inches and seven-eighths; tarsus nine lines; beak four lines.

THE Serin Finch is an inhabitant of Southern Europe. It is found plentifully in Spain, the south

of France, in Italy, Greece, in that part of Switzerland which borders on Italy, and more rarely in the south and south-west of Germany. It is also found in Central Germany, in the north of France, and in Holland; but Naumann says it is not found in the north of Germany. According to Faber, it has been found and killed between 66° and 67° of north latitude. It has also been found in the Hertz Mountains, and, according to Bechstein, it is often seen in Thuringia. Dr. Leith Adams informs me that it is an autumn visitor at Malta, is common in Sicily, and very common at Smyrna. Naumann remarks as worthy of notice that the Serin Finch is not equally plentiful in the same country, and Schinz writes to him that he has never procured it in the Canton of Zurich, though they are common a four hours' journey out of it. They are said to be plentiful in the neighbourhood of Heidelberg and Offenbach, but in the country between very rare. Count Mühle says it is very common in Greece, in company with Finches and Linnets, and that its colours are in that country very bright. Captain Loche includes it among the birds of Algeria; and Mr. Salvin ("Ibis," vol. i, p. 313,) says that it is common about the olive-groves of Sousa, in the neighbourhood of Turin, but rare in the more elevated and mountainous parts of the Eastern Atlas.

A special interest attaches to this bird in consequence of its having been recently captured in England, but as it has not hitherto been figured as a British bird, it comes into my list. The account of this capture will be found related by Mr. Bond, in the "Zoologist" for 1860, p. 7105. One specimen was said to have been caught in a clap-net on the 20th. of June, 1859, near Brighton; and a second near London, in October,

1859, shortly after a severe storm. Mr. Rowley also ("Ibis," January, 1861,) alludes to other specimens having been taken near Brighton.

The Serin Finch is generally a migratory bird, quitting its summer and breeding ground in October, and returning the following March; but in the mild climate of the Rhine, Naumann tells us it remains all the year round.

It lives most frequently in fruit-gardens, orchards, or avenues of wallnut or nut-trees, and vineyards; more rarely in oak and beech woods, and loves to dwell among willows and alders, on the banks of brooks and rivers, as well as in garden-trees in the middle of villages or near buildings. Naumann, from whom I am now quoting, further remarks that wherever it lives in summer, it makes itself known by its restless habits, and its custom of always singing on the summit of the tree tops, from which it often flies down to the roofs of buildings. In autumn it is more retired, but remains long on the thick tree tops.

It seeks its food principally on the ground, on which account it is often seen there, but never very far from trees and bushes, and still less in the open fields. It does not seem to like fir or pine woods. In its movements it is very lively and active, springing from branch to branch, very much like the Siskin or Common Linnet, and it willingly associates with these birds, particularly the Siskin. They are generally seen in pairs or small flocks, and the pairs do not seem to separate during the whole year, but "cling to each other with the utmost affection and tenderness." If one is accidentally separated from the other, they call assiduously until they are again united.

The male is very lively in the beautiful spring

weather, and sings continually from the tops of the trees, and delights especially in flying from one to the other, sometimes soaring and sometimes fluttering aloft, and flying straight down again like the Tree Pipit. In its usual flight it resembles the Siskin, moving quickly from place to place, and uttering its peculiar note, which has been compared to that of the Siskin, the Goldfinch, and Canary-bird. The song has much variation, and may be heard at the breeding-place all day long, and from March till far into August. It is a favourite cage-bird, assorting by choice with Siskins, Goldfinches, and Canaries, and it may, like these birds, be taught many performances.

Like other Finches, the Serin feeds on seeds, especially those grown in gardens, and it prefers the oleaginous to the farinaceous. Naumann mentions particularly cabbage, hemp, and poppy, rape, turnip, radish, and lettuce seed, for which it lays contributions on the cultivator, and for which it is doubtless often shot and trapped. The wild seeds which it seems to prefer, are dandelion, hawk cabbage, chicory, the grasses, and even, when driven to it, oats. In autumn it seeks its food among the alders and birches.

Its nest is much more frequently found on fruit and walnut-trees than on beech, oak, or alder. It is in position more like the nest of the Goldfinch than the Linnet, placed in a forked bough, not very high, or in the lowest branches; in bushes and dwarf fruit trees, but not in low bushes. The nest is sometimes like that of the Goldfinch, at others more like the Greenfinches, but smaller, very narrow, rounded, and lined with more skill than the latter. It is formed of small roots, woven together with old twigs, which are however, sometimes wanting. The inside is tolerably

deep, and made soft and warm with feathers, and generally a large quantity of horse-hair, and single pigs' bristles, which secure a smooth resting-place for the eggs, and make, as Naumann justly remarks, one of the prettiest of nests.

The eggs are about the size of the Siskins', but shorter and rounder, very tender-shelled, and in colour resembling the Linnets', having a ground of greenish white, with solitary dots and short streaks of a dull or dark blood red, or reddish brown, forming a kind of wreath oftentimes round the larger end. They sit fourteen days, and this duty is performed entirely by the female, while the male often feeds her most tenderly from his crop.

The late lamented Mr. Edward Tuck, of Wallington Rectory, near Baldock, Hertfordshire, who took a great interest in the progress of my work, wrote to me an account of his observation of this bird in the south of France, and promised to send me the nest and eggs. The fatal disease, however, which took him to the sunny climate of the south of France, has since then terminated fatally; and it is with a melancholy interest I record an extract from one of his letters, which displayed not only considerable knowledge of natural history, but powers of observation, which would, had he been spared, have done much good to the science, in the pursuit of which he was so fond. The letter is dated June 15th., 1859:—

"I have lately returned from Cannes, where I passed several months of the winter; but I am sorry to say have met with very little indeed in the ornithological way....Provence is generally a very dry and barren country, and you only find birds in the valleys, on the borders of streams. With regard, however, to the

Serin Finch, *F. serinus*, I found that some wintered in Provence. I heard the song two or three times in December, and obtained a specimen in January. They begin to sing again about the middle of February. By the middle of March their numbers had greatly increased by arrivals, and they were extremely abundant all along the edges of the pine woods, with which all the higher ground of the country is covered. They evidently frequented the borders of cultivated ground more than the interior of the wood. The males were then in full song. From the middle of March the numbers gradually lessened till there were only some pairs left here and there breeding.

"They build chiefly in gardens, more so than in pine woods. The nest is always on a pine or cedar, from six to sixteen feet from the ground. On the 14th. of April I saw some young Serins out of the nest, but they could not fly; and on the 26th. I took a nest containing only two fresh eggs. On my way home, I stayed some days at Fontainebleau. I certainly did not hear these birds there, though the gardens round the palace seemed suitable for them, and I was shewn the skin of one said to have been obtained there. The Serin Finch is not found in Madeira. I have seen it at Cintra, near Lisbon, in June, but they are never numerous there then."

In Bädeker's work upon European eggs, I find the following remarks about this bird by Brehm:—"The Serin Finch inhabits the south of Europe, Asia Minor, and North Africa. In Germany it removes in a remarkable manner towards the north. I saw it at Nuremberg in 1130, and for three years at Jena and Dresden. It comes into the south of Germany during the first fortnight in April. The half-bowl-formed

nest is made of grass and stalks of plants, and lined with feathers and hairs. Many also use the catkins of the willow upon the under layer, whilst others are made almost entirely of rootlets, and some build almost exclusively of the clustering blossoms of the chesnuts. It lays in May five eggs, which are similar to those of *F. citrinella* in size and markings. The ground-colour is pale green, having at the narrow end faint reddish grey spots, in the middle brown, while, at the greater end, the small streaks and dots are black brown."

Savi's interesting account does not differ from those I have given. It appears in Tuscany in flocks in April.

The male in breeding plumage has all the upper parts olivaceous, with longitudinal black markings; the vertex, throat, crop, and an imperfect collar round the neck, greenish yellow; the nape mottled yellow and olivaceous; the lower part of the body and flanks dirty white, the latter being marked with longitudinal brown spots. The wings are crossed with two narrow yellowish white bands. Primaries and tail quills brown, bordered lightly with dirty white; the rump is clear canary yellow; beak horn brown above, whitish below; feet and iris brown. In autumn the colours are less pure.

The female has less yellow in its plumage than the male, more black above, and more brown spots below.

Before the first moult the young are variegated with grey and yellowish, with elongated brown markings.

My figures of the bird and its egg are from specimens kindly sent me by Mr. Tristram.

The bird has also been figured by Buffon, pl. enl. 658, (male;) Roux, Ornith. Provence, pl. 94, (male and female;) Bouteil, Ornith. du Dauph., pl. 34, fig. 4;

Gould, B. of E., pl. 195; Temminck, Atlas du Manuel; Vieillot, Galerie des Oiseaux, pl. 62, et Faune Franc., pl. 38, fig. 1; Naumann, Vogel Deutsch., vol. v, pl. 123.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus FRINGILLA. *(Linnæus.)*

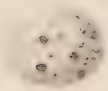
CITRIL FINCH.

Fringilla citrinella.

Fringilla citrinella,	LINNÆUS. TEMMINCK.
" *alpina,*	SCOPOLI.
" *brumalis,*	BECHSTEIN.
Serinus citrinella,	BOIE.
Chlorospiza citrinella,	KAUP.
Cannabina citrinella,	DEGLAND.
Citrinella serinus sive alpina,	BONAPARTE.
Venturon ordinaire, Le Venturon de Provence, or Gros bec Venturon,	OF THE FRENCH.
Gemeiner Citronenfink,	OF THE GERMANS.
Venturone,	SAVI.

Specific Characters.—Vertex and back green; nape grey. Primaries all tipped with ash; first and third primaries of equal length, and the longest in the wing; tail much forked. Length four inches and four fifths; carpus to tip of wing three inches; tarsus seven lines; beak four lines; tail two inches and three tenths.

THE Citril Finch is very common in the south of Europe—in Greece, Turkey, Italy, the shores of the Mediterranean, and in Provence. It is found acciden-



tally only in Germany and the north of France, and, according to Temminck, never in Holland. It is by no means a rare bird in Spain, nor in Switzerland. It leaves Germany and Switzerland in October in flocks, and returns in March or April. It is also found in those parts of Asia and Africa which abut on the European border. Captain Loche says it occurs only accidentally in Algeria.

Thus limited to the southern parts of Europe, the Citril Finch is nevertheless a true Alpine bird, living not only among the smaller hills, but frequenting the highest Alpine mountains as far as the arboreal region extends. It is found, says Naumann, in the upper dark forests which are broken here and there by open plains overgrown with grass, and rocky precipices. Count Mühle says it is rare in Greece everywhere except in the mountains.

The following account of its habits is from Naumann:—It is a cheerful restless little bird, very active in its movements, and somewhat shy. It seems always full of joy, and is constantly heard even in bad weather, or in the middle of alpine snow and storms. It is never known to stay long in the same place; and appears in constant motion, turning its tail from side to side, hopping or fluttering among the boughs of the trees, or on the earth when it seeks its food; its spring is quick, its deportment fearless. In all this its affinity with the Siskin is remarkable. It resembles it also in its flight, especially that of passage. It seems alike indifferent to weather or temperature, and only departs from its mountain home, when the ground is frozen, and there is a deficiency of food.

Its note is a gentle piping, described by some as 'gu,' by others as 'qjiul' or 'qjiub.' This call is

heard frequently as it flies or immediately after settling. The song of the male is variously described. Bechstein compares it to that of the Canary bird, but says it is not so shrill—something between a Canary bird and Tree Pipit. Schinz compares it to the song of the Siskin. It is really a loud, clear, pleasant song, which may be constantly heard at the breeding-season, from March to September. The female also sings a little, but not so loud as the male.

Many agreeable qualities combine to make the male Citril Finch a favourite cage-bird, and it is kept by amateurs in great numbers. It becomes domesticated quickly, is easily tamed, and not difficult to keep even for a long time. It feeds principally on the seeds of firs or pines, and on those of many alpine plants, and also destroys buds and blossoms, though probably it does this, like the Goldfinch, in search of insect larvæ. In confinement it is fed, like other Finches, on poppy or hemp seed, but with the last it gets too fat, and it must not consequently be made its principal food.

It nests in the mountains of the countries above named, in the Tyrol, and in many places in Switzerland on the southern Alpine chain. The nest is sometimes placed in the thick stumpy alpine firs or other pine trees, sometimes under the roofs of the herdsmen's cottages. It is cup-shaped, and very well and skilfully woven together. It is made of dry grass, with moss and twigs more or less intertwined, is tolerably smooth on the outside, and very beautifully lined with many hairs of various animals, small feathers, and husks of the poppy.

The eggs are four or five in number, and in form and colour very similar to those of the Goldfinch.

They are, however, much smaller. The ground-colour greenish blue, with variously-sized dots of reddish grey and blood red, chiefly at the larger end.

According to M. Crespon, it will breed with the Serin Finch.

The male in breeding plumage has the top of the head and back olive green; nape and sides of throat grey; rump, throat, and all the under parts citron yellow; wings and tail dark brown; the primaries lightly and the secondaries broadly tipped with ashy white; two oblique bars of olive green across the wings. Beak brown; feet reddish; iris clear brown.

The female has the plumage browner, with less of yellow below, and the wing bars are whitish.

According to Degland the young before the first moult have the upper parts of a russet grey, with a longitudinal black spot in the centre of each feather; the inferior parts russet white, with a number of brown spots, distinct, but less pronounced on the middle of the abdomen; wings of a blackish grey, with the coverts broadly bordered and tipped with light yellow ochre, forming two transverse bands, one on the middle, the other on the lesser coverts; primaries brown, bordered and tipped with grey; tail quills equally brown, bordered and tipped with ashy white.

My figure of this bird is from a specimen sent me by Mr. Tristram. The egg is from Thienemann.

The bird has also been figured by Temminck, Atlas; Vieillot, Faune Franc., pl. 40; Roux, Ornith. Prov., pl. 90, (male;) Naumann, Vogel Deutsch., pl. 124; Bouteil, Ornith. du Dauph., pl. 35, f. 3; Gould, B. of E., pl. 198.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus FRINGILLA. *(Linnæus.)*

SNOW FINCH.

Fringilla nivalis.

Fringilla nivalis,	BRISSON.
" *saxatilis,*	KOCH.
Passer alpicola,	PALLAS.
Plectrophanes fringilloides,	BOIE.
Chlorospiza nivalis,	KAUP.
Montifringilla nivalis,	BREHM. BONAPARTE.
Pinson de Neige des Alpes,	OF THE FRENCH.
Alpen Schneefink,	OF THE GERMANS.

Specific Characters.—Wing coverts, the chief part of the secondary quills, and all the tail feathers with the exception of the two middle ones of a pure white. Length six inches and two fifths.

THE Snow Finch is an inhabitant of the highest mountains of Southern Europe, namely,—Switzerland, south of France, the Pyrenees, the Appenines, and the Caucasus. It is found also in the Tyrolese Alps, and occasionally, while on its passage to the north, in Thuringia and Anhalt. In the north of Europe it is rare. It has, however, been taken in Sweden ac-

cording to Nilsson, though he only mentions a single capture: and it is equally rare in Siberia. It occurs in the high mountains of Persia, and is found in North America. Dr. Leith Adams informs me that it is common about Candahar, so that it has a wide and extensive range. In Switzerland it is found in the highest mountains in the regions of everlasting snow, descending to the lower parts only when driven by storms; and in the spring of the year it is found in the higher alpine valleys. In summer it still prefers the most desolate places, where it is seldom disturbed by its enemy man; such as the Usfernthal, the desert regions of the Gumsel and the Simplon, and in the neighbourhood of the convent of St. Bernard, where it is found all the year.

Naumann, from whom my account is principally taken, says that the Swiss naturalists consider there are two species or permanent varieties, one living always in the Swiss mountains, the other in the south of Germany; but he does not agree with this opinion, considering the idea has originated in the well-known migratory habits of the bird.

The Snow Finch lives during summer, and in a great part of the year where no trees grow; it is therefore seen on the ground, stones, and walls or roofs of buildings. It is a cheerful, restless, and vigorous bird, resembling in its habits the Mountain Finch and Chaffinch, and like them it runs and hops on the ground, and has a similar flight, in which its beautiful plumage is well displayed. It is generally considered a very shy bird, but the Swiss naturalists say that in their mountains it is less wild, though ever cautious. It is sociable with its kind, and is seldom seen alone, except during the breeding-season. When

startled, it flies up high in the air, and seems to go far away, but it usually makes a circuit and returns to the same spot, where it settles upon the ground.

Its call, which is heard during flight, is a peculiar piping, short, broken note, compared by Schinz to the syllables 'tri, tri, tri.' Bechstein says that its call is a loud and clear 'kip, kip,' like that of the Crossbill. It will also in confinement sing the notes of the Mountain Finch, and is not easily tamed.

It lives upon seeds and insects, preferring of the first those that are oily, and of the latter beetles and grasshoppers, moths, etc. In winter its food is by necessity confined to the seeds of alpine plants—fir and pine trees, and, like our Sparrows and Finches, it may be seen feeding among the dung of horses, and it will even in inclement seasons venture into the cloisters of St. Bernard to pick up grains of rice or anything it can get. Schinz tells us they are always in good condition, and very fat in summer. In confinement they will do well on rape and hemp seeds, but will also eat those of the fir, which they seem to like much. They also feed upon the seeds of several grasses.

The Snow Finch breeds only in the highest regions of the highest mountains, where the growth of wood has ceased, and near those dreary and desolate spots where the snow has never melted since the mountain was upheaved from the bowels of the earth. Yet it hath pleased Him, without whose knowledge not a Sparrow falleth to the ground, to locate here one of the most beautiful of His created things; and as the weary traveller seeks among these wild and inhospitable regions the records of a past history in the world—and is full of that deep and indescribable feeling which

the sublimity of such a solitude creates within his mind—he is charmed and delighted by the chirp or the flutter of this lonely denizen of the Alps, which proclaims to him by its presence there—by its adaptation to its existence—by its distinct individuality—that it had a special creation and a special position assigned to it in the great scheme of nature.

The nest of the Snow Finch is placed on the rocks, between stones, in fissures of the rocks, or in holes, as well as in the balconies and under the roofs of the hospitals of the great St. Bernard and the Simplon. It begins to build in May, and has probably only one brood in the year. The nest is made of dry grass, stalks, and moss, and lined inside with feathers or hairs. It contains from four to five eggs, which are very similar to those of other Finches. The ground-colour is bright greenish, with ashy grey and dark green or brown irregular spots and dots.

The young are fed upon insects, and are taken off into the snow, even to the highest regions, by the old birds.

The male in breeding plumage has the top of the head and neck of an ashy colour, running into bluish; back and scapularies brown, shaded with russet on the borders of the feathers; upper tail coverts partly white and partly black, with their edges russet; the inferior parts are white, washed with ash on the crop and neck, with a large black spot on the throat; abdomen white; under tail coverts white, with some brown spots at their extremity. Wings black, with a large white longitudinal band formed by the wing coverts and the greatest part of the secondary quills; the primaries bordered on the outside, and tipped with russet grey; the two middle tail feathers black, bordered with

russet grey; the others white, tipped with a slight black spot bordered with russet; the most external feather on each side entirely white; beak black; feet and iris, brown.

In autumn the colours of the male are browner above, the black mark on the neck less extended, and the borders of the feathers which form it ashy; beak yellowish, and the feet of a darker brown.

The female does not differ from the male, except by the ash-coloured head, which runs into russet, and the absence of the black mark on the neck.

The young before their first moult are above and on the sides of the head and nape of an ashy brown, with the feathers broadly bordered with russet; back and scapularies brown, with the feathers bordered with red; front and sides of the neck ashy white; crop, abdomen, and under tail coverts of a russet white; the white feathers of the wings and tail, washed with an ochreous red on their borders; the black feathers of the same parts bordered and tipped with russet; beak saffron yellow; feet russet brown.—(Degland.)

Figured also by Buffon, Brisson, Wilson, Temminck, etc. By Roux, Ornith. Prov., pl. 89, (male in winter plumage;) Bouteil, Ornith. du Dauph., pl. 35, fig. 1; Naumann, Vogel Deutschlands, pl. 117; Gould, B. of E., pl. 189.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus FRINGILLA. *(Linnæus.)*

ALPINE SERIN FINCH.

Fringilla pusilla.

Fringilla pusilla,	GMELIN.
Passer pusillus,	PALLAS.
Serinus "	BRANDT. BONAPARTE.
Pyrrhula pusilla,	DEGLAND. DE SELYS.
Moineau des Alpes,	OF THE FRENCH.
Alpensperling,	OF THE GERMANS.

Specific Characters.—Rump grey, spotted with blackish; abdomen dirty white; primaries bordered with yellow in the adult, and with white in the young. Length about four inches and a half. —DEGLAND.

THIS species is said by Pallas to be common in the Caucasus and the borders of the Caspian Sea, to which it goes in spring from the high mountains in common with *Fringilla nivalis* and *Sylvia erythrogastra*, which come down in winter from the alpine regions of Persia.

The following is the description given by Pallas:—"Forehead testaceous red; vertex black. Neck and back grey, with the middle of the feathers fuscous; abdomen and under tail coverts white. Feet black; beak fuscous."

The above description is thought by De Selys-Longchamps to apply only to the young in the winter plumage. In the "Revue de Zoologie" for 1847, page 120, this distinguished naturalist has given the following more extended diagnosis of the adult bird:—Top of the head, auditory region, and throat, of a dull black, with the forehead of a bright and lively red; nape, upper parts of the body, and upper tail coverts, grey; the centre of the feathers blackish, having the borders of a saffron yellow or grey white; the parts below dirty white, with longitudinal blackish spots on the flanks and under tail coverts, the whole irregularly washed with saffron yellow; wings blackish, the lesser coverts broadly bordered with saffron yellow; primaries slightly bordered with this colour, and the secondaries with grey white; tail blackish, with the end lightly bordered with grey white; beak brown; feet black.

Figured by Pallas, Zoog., 1811-31, vol. 2, p. 28.

I have not a specimen or good drawing of this bird, which I therefore am sorry to say cannot be figured.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus FRINGILLA. *(Linnæus.)*

HOLBOLL'S REDPOLE.

Fringilla Holboelli.

Fringilla Holboelli,	BREHM.
" *canescens,*	DE SELYS; Faune Belge.
" "	SCHLEGEL; Revue.
" *borealis,*	TEMMINCK; Man., 1835.
" "	KEYSERLING AND BLASIUS; Die Wirbelthiere Europa's.
Linaria canescens,	GOULD. DEGLAND.
" *Holboelli,*	BREHM.
Acanthis Holbollii,	BONAPARTE.
Ægiothus Holboelli,	CABANIS.
Carduelis Holboellii,	DUBOIS.
Siserin Grisatre,	OF THE FRENCH.
Grauer Leinfink,	OF THE GERMANS.

Specific Characters.—Rump pure white in all seasons, except in the breeding season, when it has in the male a rose-red tint; tail six cents and a half, equal about to two inches and three fifths. Length five inches and three fifths.—DEGLAND.

THE Lesser and Mealy Redpoles are included in our British lists, both of them being frequently taken in this country. Mr. Gould has, however, figured a variety

in his "Birds of Europe," which is considered by some to be only a variety of *F. borealis;* and Mr. Morris, in his "History of British Birds," has figured the Mealy Redpole under Gould's name of *Linaria canescens.*

As long ago however as 1842, M. Selys De Longchamps, in his "Faune Belge," p. 73, remarked that "*F. borealis* must not be confounded with *F. canescens*, which differs always from it, in that the whole rump is of a pure white above, but it has a much stronger make, a very long tail, and the ground colour of the plumage white, tinted with brown."

This species inhabits Greenland, and is found occasionally in Belgium and the north of France.

M. Dubois, in his "Planches Coloriées des Oiseaux de la Belgique," a work which I have before had occasion to speak of with favour, has the following notice of this bird, which I take the liberty, with the author's kind permission, to transcribe:—"The Tarin D'Holboll is very rare, and we have only very vague and very imperfect accounts about it. We are ignorant of its true country. It is only known that it comes from the north, and that it appears in Germany and Belgium. Nothing is known about the habits and nidification of this bird, but they probably do not differ from other species of the same genus. It is distinguished from its congeners by the body and beak being stronger, and the greater length of the wings. Many naturalists have made a special genus for this Tarin and the two other European species, but we cannot admit this distinction, as these Tarins do not differ in anything but the colour of the plumage.....The figures are taken from two species in the collection of M. De Selys-Longchamps."

The male has the vertex and forehead blood-red; upper parts of neck and body whitish, with longitudinal

blackish marks; rump, front of neck, and chest, rose-red; rest of the under parts white; ear coverts and throat black; primaries and tail feathers brown, edged with pure white; beak yellow below and brown above; feet and iris brown. The female is like the male, but without red on the neck or chest; the lower part of the body white, with brown streaks on the sides.

Male and female in winter have the ground colour of the plumage white, tinted with brown; rump pure white, and the black of the ear coverts and throat dull. The young before the first moult are unknown. —(Degland.)

My figure is taken from the male in Dubois' plate, which I have selected as being a good drawing of the specimen referred to in De Selys' collection.

It has also been figured by Gould, Birds of Europe, 193?

The following members of the genus *Fringilla* require a word or two of notice:—

Fringilla incerta, Risso, *Chlorospiza incerta*, Bonaparte, is only the young of *Pyrrhula erythrina*.

Fringilla brevirostris is not considered by Mr. Gould to belong to the European fauna, all the specimens which have fallen under his notice having been captured in Asia.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus PASSER. *(Brisson.)*

Generic Characters.—Beak short, slightly convex, and curved at the tip, the border of the upper mandible slightly overlapping the inferior. Wings medium size, the second primary the longest. Tarsi nearly as long as the middle toe; claws sharp and curved; tail nearly square, and of medium size.

ROCK SPARROW.

Passer petronia.

Passer petronia,	SCHLEGEL. DEGLAND.
" *sylvestris,*	BRISSON.
Fringilla petronia,	LINNÆUS. GMELIN. LATHAM.
" "	KEYSERLING AND BLASIUS.
" "	TEMMINCK. SCHINZ. NAUMANN.
Coccothraustes petronia,	CUVIER. LESSON.
Petronia rupestris,	BONAPARTE.
Moineau Soulcie,	OF THE FRENCH.
Steinsperling,	OF THE GERMANS.
Passera Lagia,	SAVI.
Ring Sparrow, Foolish, Speckled, and White-tailed Sparrow,	LATHAM.

Specific Characters.—The tail is large; each of the tail feathers, except the two middle, marked with a round patch of white on

ROCK SPARRO

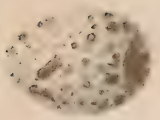
the extremity of each inner web; under tail coverts fawn-colour, with a round patch of white at the extremity of each feather. In the adult there is a band of yellow across the neck anteriorly. Length six inches; carpus to tip four inches; tail two inches and a half; tarsus nine lines; beak eight lines long, and one inch and a fifth in circumference at its base.

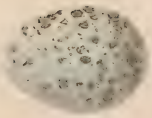
The genus *Passer* is well marked, and has been established ever since ornithology was a science. Notices of it may be found in the writings of Gesner, Willoughby, Aldrovandus, and Ray, and it was finally determined by Brisson, in his "Ornithologia," published in 1760. Cuvier suggested the name of *Pyrgyta* instead, and in some few works he has been followed, very much against the true interests of science. Bonaparte, following Schlegel and others, adopts Brisson's genus with some restrictions, and with his usual fondness for converting specific into generic names, he has followed Kaup by placing the subject of the present notice in a separate genus under the name of *Petronia rupestris*.

The Rock Sparrow is an inhabitant of the warm and temperate regions of Europe, namely, Spain, the south of France, Sardinia, and the whole of Italy. In the south of France it is very common in Anjou, the Pyrenees, and the Basses Alps. It is found occasionally in Lorraine, and several individuals are stated by Degland to have been captured in the neighbourhood of Paris, and one female at Lille, in October, 1839. It is rare in the north of France and Switzerland, and is only occasionally found solitary in the west and south of Germany, viz., the Rhinegau, Wetherau, and several other places on the Rhine. Naumann says it has been shot in Thuringia, but not, to his knowledge

in Anhalt. It is included in Savi's "Birds of Tuscany," but it does not appear to be a common bird there. Count Mühle says that it is solitary in the whole of Greece on the bare stone walls, and very plentiful throughout the Grecian Islands. Lord Lilford, in his description of birds observed by him in the Ionian Islands, ("Ibis," vol. ii, p. 137,) says that he observed several of these birds in the Acrocerannian Mountains, in May, 1857, and in Montenegro in August of the same year. It was found by Captain Loche in the three provinces of Algeria; and is included by Mr. Tristram in his list of the birds of Southern Palestine, where it is observed everywhere on the bare stony hills. Dr. Leith Adams informs me that it is very common in Sicily, occasionally visits Malta in the spring, and is abundant in Affghanistan.

According to Naumann, to whose invaluable work I am indebted for most of the following information, it is a stationary bird in mild climates and a migratory one in cold countries. They associate in small flocks rather than greater multitudes, which are at all events never seen in Germany. In the Rhinegau, especially near Wiesbaden, they are observed in autumn on fruit trees by the sides of the roads, and in corn-fields, in flocks. Brehm mentions flocks of about ten. They choose mountainous places for their residence, where, among rocks and ruins they love to dwell. In winter they mix with other birds, and are seen about the roads and villages, but it does not appear that they visit farm-yards. In autumn they are found in stubble-fields. They appear to avoid level land. At night they sleep in holes of walls and ruins, always choosing a hole with a very narrow entrance, and shew their sociable qualities by selecting places near





1. ROCK SPARROW.

ITALIAN HOUSE SPARROW.

each other. Brehm records having seen three of them enter the same hole.

Its habits are entirely those of the Sparrow, and nothing can justify that reckless disregard of close affinities by which it has been separated from that genus. Though resembling most in its habits those of our House Sparrow, it differs from it altogether in one thing,—it is more distrustful of man, and is generally a very shy bird, flying away upon the approach of danger, and keeping a good look-out against it. Its movements on the ground are like those of other Sparrows, but it is more active and brisker. In its flight it is compared by Brehm to the Crossbill. They are very sociable among each other, with the exception of certain quarrels which take place like those of the House Sparrow, and their tone of voice is similar.

Leisler records having seen large flocks of the Rock Sparrow in the Rhinegau, in 1803, where they were making a House Sparrow-like chattering among the trees. The manner of the bird is crafty, and it frequently moves its wings with a quick short movement. They are very sensitive to the cold of winter, and many are found dead during that season in the holes of trees.

The usual note is a homely croak, similar to the call of the Mountain Finch. Brehm says it may be represented by 'qjiwit,' and that it is similar to that of the Goldfinch, and very different from that of the Linnets and Siskin. One note serves as a warning cry, another invites to settle, and a third is the signal for flight. A young bird begins to pipe early, and has a note like that of the Canary bird, in addition to the 'qjiwit.' When it fears danger or its nest is approached it calls out like the other Sparrows. Brehm

compares the song to that of the Reed Bunting, which is not saying much for it, but it is not without melody.

In confinement the Rock Sparrow is very tame and sociable with its kindred. Brehm brought up a young bird which was very confiding in its manner to him. It would feed out of his hand, and let him know by a cry or a look when it wanted food. It sung before it was full-grown, and was heard constantly in October, being loudest when the other birds were singing. Leisler informs us that he brought up a young bird, which was very docile and an excellent mimic, having, among other qualifications of this kind, learned to imitate, much to his master's annoyance, the cry of his Marmot. This bird, however, did not seem inclined to sing when people were in the room, but it was nevertheless very tame, comical in its habits, and mischievous.

The Rock Sparrow feeds on seeds of various kinds, insects and their larvæ, especially beetles, grasshoppers, and Naumann adds, I am sorry to say, cherries. Large grains of sand are often found mixed with the food in the stomach. It frequents ploughed fields, meadows, and roads, after corn-seeds, especially oats, which it seems to like best of the cereals. It is also a berry feeder. It lives in early summer on insects; and feeds its young, like the rest of its family, upon caterpillars and other larvæ, together with beetles, grasshoppers, and moths, all of which it removes from the cultivated lands, very much to the benefit of the farmer, who rewards its relations for the same service in this country with a dose of poison. Naumann, however, expatiates upon the fondness of the Rock Sparrow for cherries, in search of which it will lead

its young into orchards, giving them the fleshy part, and then cracking the stone for the kernel with its strong beak. When it catches large insects it bites off the head, wings, and legs, and eats the body in small pieces. It differs from other Sparrows in preferring oily to farinaceous seeds.

The Rock Sparrow nests in the Rhine country, in the neighbourhood of Wiesbaden especially. They build in high fruit trees, or in the holes of ruins of old castles and watch-towers. They pick out a narrow and deep fissure in the walls, generally pretty high up; they never build in woods. They will return year after year to the same hole, and, like other Sparrows, young and old sleep in them together. The nest is like that of the House Sparrow; there is a great heap of straw and stalks of grass, with fine rootlets and other fibres of plants, old rags, and thread, and it is lined with hair, worsted, wool, and feathers in abundance. It is always placed so deeply in the hole that the materials cannot be seen outside.

It appears from the authority of Brehm that they only lay two or three eggs. Naumann, however, thinks this is a local peculiarity and not general. The eggs are very similar to those of the House Sparrow, but larger, and equally as various. The ground colour is a cloudy white, with ash-grey and brown dots marked over with streaks and spots, through which much of the ground colour appears. Those slightly marked have often greater spots, others mostly small streaks running over them, and the markings are generally most numerous at the larger end. The grey marking varies into brighter and darker, and the brown changes from yellowish to reddish grey brown, and even almost into blackish brown or slate-colour.

They appear only to breed once in the year. The old birds are very anxious about their young, and are in great distress when anyone approaches the nest which contains them, and are very careful watchers.

The male in breeding plumage has the head light brown, with two darker bands on each side; all the upper parts more or less of the same tint, marked with longitudinal patches of darker brown, the borders of the feathers being lighter; rump and under tail coverts light brown, the feathers tipped with white; throat, crop, and abdomen tawny white, with grey and brown spots; a yellow band separates the throat from the crop; sides of the head and neck ash-colour, with a brown band beneath the eye, and a white broad line separating the eyebrow from a similar band on the head. Wings the same colour as the back, with the coverts tipped with russet grey; the primaries brown, with a white patch on the middle of each outer web, except the first, and more marked on the second and third; tail feathers brown, and terminated, except the two middle ones, with a round white spot on the inner web. Beak brown above, yellowish below; feet russet; iris brown.

The male in autumn has the general tints browner; the black spots and the whitish ones above larger; the scapularies, wing coverts, and primaries tipped with whitish; the under parts with the longitudinal brown spots larger and darker.

The female differs very little from the male; the yellow mark on the neck is not so distinct, and all the other colours less lively.

The young before the first moult resemble the female, without the yellow mark on the neck. Degland says this mark is lost in confinement.

My figure of this bird is from a specimen kindly sent me by Mr. Tristram, marked "Bethlehem, 31st. March, 1850." The egg is from Bädeker.

The bird has also been figured by Buffon, pl. enl. 225, under the name of *Moineau de bois ou Soulcie;* Roux, Ornith. Prov., pl. 75 and 76, (male and female;) Naumann, Vogel Deutsch, pl. 116, (male and female;) Bouteil, Ornith. du Dauph, pl. 33, f. 1, but not a good figure; Gould, B. of E., pl. 186.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus PASSER. *(Brisson.)*

ITALIAN HOUSE SPARROW.

Passer domesticus cisalpinus.

Passer domesticus cisalpinus,	SCHLEGEL.
" " *var. B,*	KEYSERLING ET BLASIUS.
" *Italiæ,*	BONAPARTE.
" *Italicus,*	DEGLAND.
Fringilla cisalpina,	TEMMINCK.
Pyrgita Italiæ,	VIEILLOT.
Moineau cisalpin,	OF THE FRENCH.
Italianischer Haussperling,	OF THE GERMANS.
Passera Reale,	SAVI.
" *capannaja,*	STOR.

Characters of Variation.—Back, light chesnut and black; top of the head and nape maroon or brown; flanks unicolorous; the first primary is longer than the third, and very nearly as long as the second, which is slightly the longest in the wing; wings reach more than half way down the tail. Length about six inches.

IT is impossible to resist the fact that the present is only a permanent variety of the Domestic Sparrow. I have endeavoured with the greatest care, by a comparison of specimens, to detect any real specific difference, but

without success. The Italian bird differs from the Domestic Sparrow in some unimportant yet permanent colouration, and the wings extend further down the tail when closed. There is also a slight difference in the second primary, which is relatively to the first and second longer than in the Domestic Sparrow. But there are the same general dimensions precisely; the flanks and abdomen are of the same unicolorous dull grey; the black markings on the throat and crop are of the same character, and defined by the white of the cheeks and side of the neck with a similar sharp and distinct outline. The habits too are precisely similar, and it is only as a variety under the name given it by Schlegel, that I admit it into this work.

The Cisalpine Sparrow replaces the common type throughout the whole of Sicily. It is found during its migration in the south of France, and has been noticed by Strickland as occurring at Smyrna. Dr. Leith Adams also informs me that it occurs in Malta, and that it is said to breed with the following species. Its habits and propagation are precisely similar to those of the House Sparrow. It builds its nest in the same places, and of the same form, and the six eggs which it lays are similar in size, shape, and colouration to those of our well-known bird.

Mr. Tristram remarks, (Ibis, vol. i., p. 293,) "In its habits this Sparrow agrees exactly with our own, inhabiting the roofs of houses and the rafters of sheds in preference to the more distant groves and gardens. I never found it in great communities at a distance from buildings; but wherever man dwells in the desert there it is found his constant companion. Probably there are frequent instances of hybrids in the gardens where both species may be found together."

The differences between the two birds having been expressed in the characters of variation at the head of this notice, a more detailed description is unnecessary.

My figures of the bird and its egg are from specimens sent me by Mr. Tristram.

It has been figured also by Roux and Gould.

GRANIVORÆ.

Family FRINGILLIDÆ. (Bonaparte.)

Genus PASSER. *(Brisson.)*

SPANISH SPARROW.

Passer salicarius.

Passer salicarius,	VIEILLOT.
Fringilla Hispaniolensis,	TEMMINCK.
" *sardoa,*	SAVI.
Passer domesticus salicarius,	KEYSERLING ET BLASIUS.
Moineau à poitrine Noir,	OF THE FRENCH.
Schwarzbrüstiger Sperling,	OF THE GERMANS.
Passera sarda,	SAVI.

Specific Characters.—Top of the head deep chesnut or maroon; back black, with longitudinal streaks of cream-colour; flanks thickly spotted with black on a dirty white ground. The first primary the longest in the wing, but nearly equalled by the second and third, and all of them longer than the fourth. Length about six inches; carpus to tip three inches; tarsus nine lines; middle toe and claw eleven lines; beak six lines; tail two inches and a half.

THE Spanish Sparrow has very strong structural affinities with the House Sparrow, but its ornamentation and habits are so decidedly different that I think there can be no doubt of its specific distinction. Professor

Blasius has, however, made it a variety only of the *Passer domesticus*.

The Spanish Sparrow is, as its name implies, an inhabitant of Spain, but it is also common in the south of Europe generally, particularly in Sardinia, Sicily, and Italy. Count Mühle says it is very rare in Greece, but when found it is not in company with the Domestic Sparrow, from which he considers it quite distinct. Dr. Leith Adams informs me that it is the commonest bird in the island of Malta, and breeds in the walls of the forts and houses. Dr. Adams also mentions having shot and seen it in confinement with a yellowish black bill, and lighter tinge of plumage, but in no way distinct. It is also said in Malta to breed with *P. cisalpina*, and that a hybrid is produced, but Dr. Adams has not been able to confirm this statement. Dr. Adams further adds, "I have seen specimens in collections made in the Western or Trans-Indus portion of the Punjaub, where it is known by the name of 'Cabool Sparrow.' I do not think it is found further eastward."

It seems very common in Africa. Captain Loche met with it in the three provinces of Algeria. Mr. Tristram has recorded it as abundant in Northern, and Mr. Salvin in Eastern Africa.—("Ibis," vol. i.) Mr. Tristram also includes it in his list of the birds of Palestine, and Mr. E. C. Taylor says that it is abundant in Egypt, frequenting the open country in large flocks, and roosting in trees.

I shall take the liberty of quoting Mr. Tristram's and Mr. Salvin's very interesting remarks, from the work above alluded to. Mr. Tristram says, "The Spanish Sparrow, of which the Arab name is Zaouch, is abundant in vast flocks wherever there is moisture,

1. SPANISH SPARROW.

2. [illegible] WOODPECKER. 3. WHITE-RUMPED WOODPECKER.

and especially among the reeds in the salt marshes. At Waregla and Tuggurt, where the salt lakes are never dry, the noise of these birds is perfectly deafening, and a hundred may be, and I am told have been, brought down at a shot. Its habits are certainly very different from those of its familiar congener here, though in boldness and activity it rivals him. I am not acquainted with this bird in Spain; but in Africa, as a general rule, it does not affect the habitations of men, and always breeds near water, in vast colonies of many thousands."—(Page 293.)

Mr. Salvin says in his "Five Months Bird-nesting in the Eastern Atlas, ("Ibis," vol. i, p. 314:)—"The Spanish Sparrow is found in great numbers during the breeding season, among the tamarisk thickets on the Chemora, and in the high sedge at Zana. The Arabs destroy the nests, eggs, and young wherever they find them, as their great numbers do much damage to the crops of corn. The nests are placed as thickly as they can stand, the whole colony, consisting of perhaps one hundred pairs, occupying only five or six trees. The noise and ceaseless chattering proceeding from one of these 'Sparrow towns' can easily be imagined; and, guided by the sound alone, one may walk directly to the spot for a considerable distance. One Sunday morning four Arabs came to our tents, and gravely sitting down in a row, opened the hoods of their burnouses, and displayed eight hundred or a thousand Sparrow eggs, which they arranged in four heaps before them, and remained in their sitting posture, contemplating them with evident satisfaction. We were rather taken by surprise, but selected the best for our collections, reserving the rest for omelettes."

I have received a male and female of the bird

which Dr. Leith Adams says is very common in Malta, and which he has labelled *Passer salicarius*, Vieillot. Upon close comparison I could not discover any real specific differences between these skins and our Common House Sparrow, *P. domesticus*. I wrote this to Dr. L. Adams, and in reply that gentleman remarks:—"In the absence of specimens for comparison, my impressions have always been that our Sparrow in Malta is a true type, or else a variety of the *Passer salicarius* of Vieillot, and Sir W. Jardine, to whom several type specimens were sent, says the same. I have, however, since you wrote, made a very long series, and sent it by a friend to Mr. Sclater, requesting he will make particular enquiry into the subject, and publish his views in the 'Ibis.' It is very curious in such a central place as Malta, where so many naturalists have touched, that we should be still in doubt as to the common Sparrow of the island."

Brehm, in Bädeker's "European Eggs," says of this bird:—"It lays from four to six eggs, which are somewhat smaller than those of the House Sparrow, bluish or greenish white, like those of the Italian Sparrow, often very dark at the thick end; generally oval, but sometimes much lengthened."

The male in spring plumage has the top of the head and the nape dark chesnut brown; back black, streaked with cream-colour; upper tail coverts olivaceous brown; cheeks and superciliary ridge pure white; throat and upper part of breast deep black, while the lower parts of the breast and flanks are thickly spotted with large black markings on a white ground; middle of the abdomen and under tail coverts dirty white. The wings with a broad band of white across them, formed by the tips of the lesser coverts, and there

is a similar band above the carpus, extending from the cheeks; the lesser coverts are the same colour as the top of the head and nape, the others broadly bordered with russet. Tail olivaceous brown, with the feathers slightly bordered with ash-colour; beak black; feet reddish; iris brown.

In autumn the male has the feathers of the neck and crop bordered with ash, like the Domestic Sparrow, and the white of the cheeks also more ash-coloured.

The female has the head, top of neck, and body grey brown, with the feathers of the scapularies and the quills of the wings, fringed along their borders with yellowish; below, the colour is dirty white, with faint spots of brown in front of the neck and crop, and the flanks of a russet and ashy tint; beak brownish above, yellowish below.

The young before the first moult resemble the female, only the tints are paler, and the commissures of the beak soft and yellow.

My drawings of this bird and its egg are from specimens kindly sent me by Mr. Tristram. The bird is marked "Rhodes, April 19, 1858."

It has also been figured by Roux, Ornith. Prov., pl. 84, (adult male;) Gould, B. of E., pl. 185.

Order V.—ZYGODACTYLI.

Family PICIDÆ. (Bonaparte.)

Genus Picus. *(Linnæus.)*

Generic Characters.—Beak strong, cuneiform, or rounded, and grooved above, about as long as the head, straight, and pointed; nostrils open, oval, more or less hid by the setaceous feathers which cover the base of the beak. Tongue very mobile, capable of being projected from the mouth, armed with small sharp needle-like processes bent backwards and horny towards the tip. Feet robust and short, with three or four toes; claws arched, compressed, and pointed, formed for climbing. Wings elongated, the bastard quill short, the third and fourth the longest. Tail composed of quills having stiff and elastic shafts, ten or twelve in number, and serving as a prop in climbing.

GREY WOODPECKER.

Picus canus.

Picus canus,	Gmelin, 1788.
" *viridis Norvegicus,*	Brisson, 1709.
" *Norvegicus,*	Latham, 1790.
" *viridis canus,*	Meyer.
Gecinus canus,	Boie. Bonaparte.
Pic vert Cendré,	Of the French.
Grauer Grünspecht,	Of the Germans.
Picchio verde di Norvegia,	Stor.

Specific Characters.—Plumage green, with the top of the head grey and the forehead crimson; only the middle feathers of the tail having transverse bands across them. Length from tip of beak to end of tail eleven inches; from carpal joint to tip of wing five inches and a half; tarsus one inch; middle toe and claw one inch and a quarter; tail four inches; beak one inch and a half.

This bird, with which I commence the interesting family of Woodpeckers, is essentially an inhabitant of the northern parts of Europe. It occurs in Norway and the north of Sweden, being only found in the southern parts of this country accidentally. It also occurs in Russia and Finland, but Mr. Wheelwright informs me that it has not been observed by the Swedish naturalists in Lapland. It is sometimes found in Switzerland, near Zurich, and occasionally in France, but never, according to Temminck, in Holland. It is found accidentally in Denmark. It is rare in the south of Germany, but in the north is more plentiful than *P. viridis*. It is in this country (Germany) a bird of passage, leaving in October, and returning to breed in March. It is mentioned by Count Mühle and Dr. Lindermayer among the rarer birds of Greece. According to Temminck it is also found in America and the north of Asia, but it is not included in Bonaparte's list of the birds of the former; nor is the latter given as a locality by the same or other modern authorities.

I am indebted to Naumann's "Naturgeschichte der Vogel Deutschlands" for most of the information contained in the notices of this and the following species of Woodpecker.

In winter the Grey Woodpecker chooses a locality for its residence which is solitary, and as much as possible unobtruded upon by man. Each bird seems to have its own hunting-ground, over which it roams

regularly day by day. It is generally to be found on the same trees, and if it meets in its territory with the Green Woodpecker, a battle royal is sure to ensue, in which the former, being the weakest, always gets the worst. We may therefore fairly assume, according to the Darwinian code, that it is gradually becoming exterminated. But we have no evidence of this, nor any marks of a happily directed divergence of form in the Green Woodpecker to give plausibility to such a supposition.

"The trees and bushes," says Naumann, "about my residence are always hunted over by a Green Woodpecker, which, when driven away by a shot in autumn, is replaced by another later. Once a female Grey Woodpecker came within the above hunting-ground in March; but it became restless, did not consort with the Green Woodpecker, and called unto itself a mate. Another time a male Grey-head came and disputed the rights of territorial ownership with the Green. A terrible battle ensued, which ended in the death of the intruder."

"For a number of years I have known a pair of Grey Woodpeckers inhabit a large wood about two miles from my residence. They prefer leafy trees to pines, and woods in grassy mountains well watered by rivers have more charms for them than the hill-side or the mountain forest."

The Grey Woodpecker, like our own, loves to dwell where there are plenty of old oaks, beeches, aspens, or elms standing out in their own solitary and picturesque beauty. It will remain in the same neighbourhood so long as it can obtain its favourite food—ants. When they fail it takes its departure, and does not return. It is often seen on or about old willow

stumps near woods. It also comes into the gardens of villages or towns in winter, but does not cling to buildings. It remains, Naumann tells us, much longer, and is seen more frequently on the ground than the Green Woodpecker, and when frightened from thence, it will fly away and suspend itself from a high tree, or take up its position on the top of the same, in which it differs considerably from the Green. At night it takes refuge in the holes of trees, to which it retires, like other Woodpeckers, with great caution in the late twilight.

Naumann tells us that the Grey Woodpecker is a lively, cheerful, and impudent fellow; cautious and crafty withal, but not so shy as *P. viridis*. It is very restless, and always either seeking its food, or flying very adroitly among the trees. It rarely, however, taps upon them like the "Woodpecker tapping" of our own country, but it has equal skill in chiseling out holes for its nest or nightly habitation. It is very quarrelsome and jealous about its food, and is not by any means to be allured from this by any artificial knocking or "tree tapping." It is less shy in the breeding season, and more frequently seen on the tops of high trees than the other Woodpeckers, where it sits crosswise, sunning and pluming itself, and making its whereabouts easily discovered by its call.

It flies like the Green species, and its voice is very much the same, but rings in the ear more agreeably, while the tone is less shrill and sharp. It is heard from March to June, especially in the pairing season, and in the beautiful mornings of the bright sunny spring. The note consists of a full-toned syllable, 'klii, klih, klih, klyh, klyh, kliik, kliik, kliik, kliik,' sinking deeper each time, so that the end is much

fuller than the beginning thereof. The time is slower than that of the Green Woodpecker, and the tone fuller and less sharp, and an observant ear can easily distinguish one from the other. The male sometimes also makes a whizzing noise as it sits on a hard branch on the summit of a tree, violently hammering the same, so that the tone is brought out as 'örrrr,' but shorter than the other allied species. This noise is only heard in the bird under consideration during the pairing season, or when the female is sitting.

The Grey Woodpecker lives principally upon ants, when it can get them. When they fail it eats bark beetles, various larvæ, and, rarely, elderberries. Among ants, *Formica rubra* and *fusca* are its favourites, and the abundance of these insects generally determines the choice of a summer residence. The young are fed with the eggs or pupæ. In summer it lives on no other food, and in winter it knows where to look for them.

The nest is formed about the beginning of May, in the holes of trees, especially oak. They are not so careful in the choice of a situation as the Black or Green Woodpecker. It is generally in a tree easy to climb, and not very high up. The eggs are six in number, and very like those of the Green Woodpecker. They are, however considerably smaller, and more pear-shaped in form. The egg shell is of the finest grain —tender and thin, so that when fresh, the yolks shine through the peculiarly clear and enamel-polished white. This effect is destroyed by incubation. The male and female sit by turns, and are so fearless that they will almost permit themselves to be caught at this time. The young remain a long time in the nest, and are fed by the old ones some time after they leave it.

The whole family may be seen flying about the forest together.

Mr. Wheelwright describes a freshly-killed male as follows:—Forehead carmine red; a black streak from the nostrils to the eye, and a similar one on the side of the throat from the under mandible. Head and neck ash grey, with small longitudinal blackish streaks or spots on the crown of the head. Back and wing coverts green; rump shining greenish yellow; all the under parts of the body pale ash grey, with a faint green tinge. Wing feathers dark brown, with transverse white spots on the inner web, and similar, but smaller ones on the outer web. Tail feathers blackish green of one colour, with the exception of the two middle ones, which are marked with indistinct transverse bars. Beak thinner than that of *P. viridis*, bluish brown, having the root of the under mandible greenish yellow. Iris red; legs grey green. Length twelve inches; carpus to tip six inches and one eighth; tail five inches.

The female has no red on the forehead, which is replaced by small brown spots; the green on the back has an ashy grey tinge.

The bird which I have figured is a young one of the year, sent me with the egg by Mr. Wheelwright, of Gardsjo, Sweden. The difference in dimensions are those between fresh and dry skins.

It has also been figured by Edwards, pl. 65, (young male;) Naumann, Vogel Deutsch., pl. 133, (male and female;) Sepp. Nederl. Vogel, page 389, (female;) Stor, Degl. Ucc., vol. ii, pl. 177, (female;) Meyer, Vogel Deutsch., pl. 22, (male and female;) Roux, Ornith. Prov., pl. 59, (male and female;) Bouteil, Orn. du Dauph, supplement, fig. 4; Gould, B. of E., pl. 227.

ZYGODACTYLI.

Family PICIDÆ. (Bonaparte.)

Genus Picus. *(Linnæus.)*

WHITE-RUMPED WOODPECKER.

Picus leuconotus.

Picus leuconotus,	Meyer and Wolff, 1810.
" "	Temminck, 1820.
" *leucotus,*	Bechstein.
" *cirris,*	Pallas.
Pic varié à dos blanc,	Of the French.
Weissrückiger Buntsprecht,	Of the Germans.
Picchio vario Massimo,	Stor.

Specific Characters.—Plumage varied; the rump white, and the upper tail coverts crimson and white. Length ten inches and three quarters; from carpal joint to tip of wing five inches and a half; tarsus one inch; beak (upper mandible) one inch and two fifths; tail three inches and a half.

The White-rumped Woodpecker is an inhabitant of the most northern parts of Europe and Siberia. It is not rare in Russia, Poland, and Prussia, extending through Esthonia, Courland, and Finland. It is sometimes found in Silesia, and occasionally in the western and southern parts of Germany. One individual is recorded as having been shot in the Pyrenees, by M.

Ernest Delaybe. It is included in the birds of Greece, by Count Mühle and Dr. Lindermayer. Mr. Wheelwright writes me word that it is spread over Scandinavia, but appears to be more common in the midland districts. "They do not, however, breed with us, but in the thick fir forests of North Wermerland. It breeds also in Gothland, but is a rare winter migrant to Scania. It seems to prefer level tracts to stony rises. It is by no means shy, and often comes in winter about the wood fences round the houses; but in the forest it is generally seen high up on the top of dead trees. In manners and habits it resembles the Greater Spotted Woodpecker, and the cry is much the same. Nilsson says that they are seen generally in families in the autumn and winter. This I cannot corroborate. I never met, in our forest, in winter, more than two together, but if you shot one its partner was never far off. They breed very commonly in Smaland. It has not been identified in Denmark."

In Germany the White-rumped Woodpecker is both migratory and stationary. In the late autumn or winter it is found in the great forests, and comes thence into the neighbourhood of houses, fruit gardens, villages, or even towns, where it dwells very confidingly.

On the wing it is very like our Greater Spotted Woodpecker, and its voice differs but little from that of any of its allied species. It feeds upon insects found under the bark, maggots, caterpillars, and other larvæ. Like the Grey Woodpecker it is also very fond of ants and their eggs. Naumann says that one was shot in Silesia which was supposed to have been killing the bees from the hive, but, as none of these insects were found in the stomach, we may, I think,

fairly enter a verdict of "not guilty" on this count.

The White-rumped Woodpecker builds, like its congeners, in the holes of trees, particularly oaks. It lays four or five clear white shining eggs.

Although I have specimens kindly sent me by Mr. Wheelwright, I will let that gentleman speak for himself, as his description is drawn up from birds recently killed. Male; length ten inches and three quarters; expanse of wing seventeen inches; tail beyond the wings. Head above, carmine red; forehead white, with a brown tinge. Around, and at the back of the eyes, a large white spot, and another below on the sides of the neck; throat white. From the under mandible a black streak extends backwards under the eyes, and becoming broader at the back of the ears, passes down the sides of the throat to the breast. Breast white, with a greenish yellow tinge, and having, as well as the flanks, longitudinal streaks of black; belly and under tail coverts red. Neck above, top of back, and lesser wing coverts glossy black; the middle and lower part of back white; outer half of greater wing coverts white; the secondaries transversely barred with black and white, which arises from a series of white round spots, placed on the edges of each web at regular intervals, a similar effect being produced by the same means on the primaries, giving a barred appearance to the whole wing when closed. The first primary is about the same length as the sixth, and both are much shorter than the intervening four. Upper tail feathers and coverts coal black; the under ones cream-colour, barred with black, and becoming rufous at the tip. Iris nut brown; beak horn blue; legs lead grey.

The female has the head glossy black above; fore-

head white, tinged with rusty brown. The rest like the male, but more dull. The colours of both, especially the male, brighter with age.

My figures of this bird and its egg are from specimens sent me by Mr. Wheelwright, from Sweden.

The bird has also been figured by Bechstein, Naturg. Deutsch., vol. ii, pl. 25, figs. 1 and 2, (male and female;) Stor, Degli. Ucc., vol. ii, pl. 169, (old male;) Meyer, Vogel Deut., vol. i, pl. 11, (male and female;) Naumann, Vog. Deutsch., pl. 135, (male and female;) Gould, B. of E., pl. 228.

ZYGODACTYLI.

Family PICIDÆ. (Brisson.)

Genus Picus. *(Linnæus.)*

MIDDLE SPOTTED WOODPECKER.

Picus medius.

Picus medius,	Linnæus.
" *varius,*	Brisson.
" *cynœdus,*	Pallas.
Pic varié à tête rouge,	Of the French.
Mittlerer Buntspecht,	Of the Germans.
Picchio rosso mezzano,	Savi.

Specific Characters.—Plumage varied; rump black; under tail coverts red; flanks rose-colour, with longitudinal streaks of black. Head carmine red in both sexes. Length eight inches and a half; expanse of wing fifteen inches. Tail three inches and a half.

The Middle Spotted Woodpecker is found generally in those parts of Southern Europe, with the exception of Great Britain, which are inhabited by the Greater Spotted. In Sweden it is found in the south, and is even more common in Skania than its congeners *Major* and *Minor*. It is not found in Finland or Esthonia, but in Prussia Proper occasional specimens have been captured. It is very common in some parts of Germany,

and tolerably plentiful in Switzerland, Italy, and France. It is plentiful in some parts of Siberia, and is met with all the year round in Denmark. It occurs only accidentally in Holland.

This species has been thought by some ornithologists to be the young or only a variety of *Picus major*. But they are very distinct both in ornamentation and habits.

The female has the occiput and vertex red, as well as the male, which is not the case with *P. major*. *P. medius* never remains long in pine woods, where *P. major* loves to dwell. It is a more active bird, and will adroitly avoid any dispute leading to a fight with that bird; but it will give battle to one of its own species. Its voice is similar, but its call-note weaker.

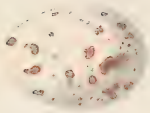
The Middle Spotted Woodpecker dwells among the thickest foliage of the highest trees, particularly oaks, elms, and aspens. It is not often found on the ground, but like its congeners is generally seen scaling trees, which it will ascend even to the top bough and perch there. Its habitation is in the highest hole it can find, and it will continue to use the same tree for years if not driven away. It is a most assiduous "tapper," and may often be seen on the under side of a decayed bough working away; the entrance hole turned towards the ground.

It is a very handsome bird, perhaps the most so of all the European Woodpeckers. It is restless but not shy, and in pairing and breeding seasons very incautious. It can make good use of its legs in hopping on the ground, or from branch to branch. It has a whirring wavy flight, and appears on the wing a slenderer bird than its ally the Greater Spotted.

Naumann says that this bird will feed not only on insects but also upon many tree-seeds, and to assist in

digesting them it may be seen picking up particles of gravel at the base of the tree. It is not content with the insects it finds under the bark, but will split off entire pieces, and crush the rotten wood beneath into holes, in its search for wood-feeding larvæ, such as *Sirex*, *Cerambyx*, *Bostrichus*, *Forficula*, etc. It never seems to suffer for want of food during the winter; it is generally in good condition, but never fat. It is very fond of nuts, and will carry them like a Tomtit into the fork of some near tree, and crack them: it generally swallows the kernels whole, and will eat acorns and beech nuts in the same way. Naumann further tells us that it is a fruit-stealer, and will rob cherry trees, not so much however for the fruit pulp as the kernels of the stones, and that it will also split open fir-cones, and feed on the seeds when it cannot get better food. It does not affect the neighbourhood of water, is not often seen to drink, and still more rarely to bathe. Its stomach is larger than that of the other Woodpeckers.

It nests in woods and sometimes in fruit gardens, which are overhung by woods of thick foliage. In the end of March or April they repair to their breeding places, which are easily betrayed by their restless habits and cries. Very soon (I am quoting Naumann) the male is seen chasing his mate from tree to tree, and among the boughs—or two males are observed having a battle royal—from which they frequently fly to swing from the highest summit of the trees. They now either call to their mates with a clear bright voice, or whirr against their rival. Their nesting place is thus easy to discover, as also the tree by the debris at the bottom, but the hole is generally hid from view, and not so easily found. It is not often less than twenty feet from the ground, and very often as high as sixty feet. The



. . . . CRESTED.

. DALMATIAN NUTCH. . . . MIDDLE SPOTTED . . . . .

entrance hole is quite round, not larger than is actually necessary, and appears from below so small that few people would believe it belonged to this bird. It is widened inside in the form of a ball, and extends downwards from the entrance seven to ten inches—seldom more.

The eggs are laid on fine wood shavings under the walls of the very prettily-worked entrance hole. They are generally five or six in number, sometimes seven. They resemble those of the Greater Spotted, but are much smaller, oval in shape, tender shelled, and of enamelled whiteness. They are hatched in fifteen days, male and female sitting alternately, and the young, in Naumann's own words, are "blind, ugly, helpless, thick-headed," having, like other young Woodpeckers, a cartilaginous knob upon the corner of the beak. When full fledged they fly round the tree in circles until they gradually separate into twos and threes. The old birds display great affection for their young.

Mr. Wheelwright describes the old male from freshly killed specimens as follows:—Forehead grey; vertex and occiput carmine red. Throat, sides of the head, and neck, white, with a black band which commences at the gape, and gradually broadening, forms a triangular spot on the side of the neck. Back of the neck, back, and rump black; shoulders white; wings black, with white spots in pairs on both webs of the primaries and secondaries; breast white, with a yellowish, and the belly white, with a reddish tinge, with longitudinal black streaks along the sides of both; under tail coverts carmine red. The side tail feathers at the end white, with black transverse bands; the four middle feathers quite black; iris brown, encircled with a whitish ring; beak shorter, more compressed and weaker than in *P.*

major; lead-coloured at the root, bluish black at the tip.

The female differs from the male only in having the colours of the head less bright, and the streak from the gape greyish and more indistinct.

The young male much resembles the female.

My figure of this bird is from Gould's "Birds of Europe," pl. 230; that of the egg is from Skania, Sweden, sent me by Mr. Wheelwright.

This bird has also been figured by Buffon, pl. enl. 611; Vieillot, Dict., pl. 26; Roux, Ornith. Prov., pl. 61; (adult male;) Naumann, Vogel Deutsch, pl. 136, (male and female;) Sepp, Nederl. Vog., vol. 4, pl. 637, (male;) Storr, deg. ucc., pl. 166, (male,) as *Picchio vario sarto.*

Picus tridactylus, Linnæus, *Apterrus tridactylus*, Swainson, *Picoides Europæus*, Lesson, *Picoides tridactylus*, Gray.—This bird has been described and figured by Mr. Morris, in his "History of British Birds." I think its claims to be considered British very doubtful, but having appeared in the above work, it will not fall within the scope of mine.

Mr. Wheelwright says of this bird, in a private letter, "It is scarcely so common anywhere in Sweden as any of the others; but in Lapland it is the commonest of all the species. It comes into Wermerland in the winter, but does not I think breed with us. It has never been seen in Skania, although it has once been shot in Denmark. It is not shy, and prefers level to rocky woods."

"In the winter all the Woodpeckers in our forests secrete themselves by day in holes of trees."

"In all the Woodpeckers the colours appear to grow more distinct with age."

Order VI.—ANISODACTYLI.

Family CERTHIIDÆ. (Bonaparte.)

Genus Sitta. *(Linnæus.)*

Generic Characters.—Beak straight, medium size, cylindrical, conic, double edged at the point. Nostrils basal, rounded, and partly hidden by hair and short feathers. Tongue short, pointed, and horny. Feet with three toes in front and one behind, the outer being joined at its base to the middle one; the hind toe very long, and armed with a long curved claw. Wings medium size; the first quill very short, the second shorter than the third or fourth, which are the longest in the wing. Tail composed of twelve quills, short, flexible, and square at the end.

DALMATIAN NUTHATCH.

Sitta Syriaca.

Sitta Syriaca,	Ehrenberg. Bonaparte.
" *neumayeri,*	Michaelles.
" *rufescens,*	Gould.
" *rupestris,*	Temminck; Man. 3, p. 287.
Sitelle de Syrie,	Of the French.
Syrische Specht meise,	Of the Germans.

Specific Characters.—Flanks and under tail coverts russet, the latter not spotted with white; tail unicolorous slaty blue, the most outward feathers slightly tipped with pale russet. Length six inches and two fifths; carpus to tip three inches; tarsus one inch; beak eleven lines.

The Dalmatian Nuthatch is an inhabitant of the country from which its English name is derived. Passing along the shores of the Adriatic we find it in the Ionian Islands and Greece commonly. Thence we trace it to Smyrna, and along the shores of Asiatic Turkey to Syria, where it is very common, that country also giving its specific and French name. Dr. Leith Adams informs me that it is pretty common in Affghanistan.

The three European Nuthatches form an interesting illustration of the adaptation of structure to climate of nearly allied species. The present bird is very much larger and stronger than the European form. As will be observed farther on, its habits differ, inasmuch as it does not frequent trees, but rocks and ruins. The northern form and that which inhabits Britain are so closely allied to each other, that the best ornithologists have denied, and I think with good reason, their specific distinction. But the three birds have all a strongly-marked character in common. The coloration varies, but it is disposed after the same plan, the blue slate back, and the dirty white or russet abdomen, and the characteristic black mark on the side of the head of each. These are instances in which there can be no objection urged as to the possibility, or rather the strong probability, of a common origin. But then we have no evidence of the stronger bird in the south, or the weaker one in the north, diverging into any different forms. The variation is adaptive and final, and the species or varieties are constant.

"Few birds," says the Rev. H. B. Tristram, in his account of the Birds of Southern Palestine, (Ibis, vol. i., p. 27,) "have interested me more than the Dalmatian Nuthatch. I had good opportunities of observing its habits in the south of the Morea in winter, and I

encountered it again in the hill country of Judæa. Unlike our species it is confined to the most barren and rocky regions, and runs up and down the stones with wondrous agility, descending head downwards, and then by a sudden bound flying to the foot of the next rock, which it climbs and runs down after the same fashion, searching the crevices as it goes for small beetles, with which the stomach of those I examined were filled. In summer and winter alike they were always in pairs, never (as *Sitta Europæa*) in small flocks. The note is louder than that of our species, and much resembles the call of the Spotted Woodpecker."

The following account given by Lord Lilford, in his descriptions of the birds observed by him in the Ionian Islands, (Ibis, vol. ii., p. 232,) is somewhat different:—"*Sitta Syriaca* is common in certain localities in Epirus, particularly amongst the stony and precipitous hills near Santa Quaranta, where I have frequently observed it in small parties of five or six, flitting about and busily examining the holes and crevices of the rocks. It is a lively and restless bird, and has a note entirely different from that of the Common Nuthatch. I never observed this bird to perch on a tree or shrub, but almost invariably found them on the most exposed and barren hill sides."

Mr. W. H. Simpson has also some interesting remarks about this bird in his "Ornithological Notes from Missolonghi and Southern Ætolia," (Ibis, vol. ii., p. 289.)—"On the opposite side of the same stone was a nest of that most eccentric bird, *Sitta Syriaca;* it had been repaired once or twice, but at that period was not inhabited. The nest was plastered over the mouth of a small cavity, and, were it not for the little round entrance hole, would be very difficult to distinguish

from the numerous structures of a species of ant which are thickly stuck over the face of the rock, and at a distance resemble in size and appearance the nest of *Sitta Syriaca* itself. But the greatest curiosity of all was to be seen under a large flat slab, which projected enough to afford convenient shelter during a shower of rain. This was a nest of *Hirundo rufula*, which had been broken at one end, and consequently abandoned by the bird. Meanwhile a Nuthatch had come and repaired the damage, possibly with the intention of appropriating the nest. The difference in the workmanship, and to a certain extent in the material, was very apparent when taken in juxtaposition. In shape the nest of *Hirundo rufula* is so different from that of any other European bird, that this proceeding on the part of the Nuthatch was still more extraordinary."

I copy the following from Count Mühle's "Beitraege Zur Ornithologie Griechenlands," p. 50:—"This is a bird which by many of our naturalists is only considered to be an acclimatized variety of the common *S. Europæa;* but it is certainly a distinct species. It lives only on the rocks, never in woods, and remains willingly about old Venetian fortresses, where it constantly glides in and out of the shot-holes. When it settles upon a rock, it likes to suspend itself with its head downwards, and hops off by fits and starts. It seeks its food on trees that are frequented by Coleoptera, such as the bread fruit, or *Cactus opuntia.* It builds its nest on the rugged rock walls under the natural roof of an overhanging rock, usually on the east or south side—never on the west. It is very large outside, and skilfully built with clay, eleven inches long from the entrance. It is lined with the hair of bullocks, dogs, goats, or jackals. It is always on the outside woven together with the seeds

of *Chrysomela graminis* and *Trichodes antiquus*. It is usually so compactly made, that I was obliged to separate one with a chisel. This nest had been used many years. The bird is very lively, restless, and inquisitive. The young are easily tamed, and become very confiding; they may be fed upon bread crumbs, but in a cage remain always on the ground, and will not perch. The families remain long together, and the young are taught by their parents all about catching insects."

The following interesting account of the nidification of this bird is translated from the Italian of the Marchese Oratio Antinori, and is inserted in "Naumannia," for 1857, page 429:—

"This pretty little bird enlivens with its cheerful note the highest and most lonely part of the Anatolian mountains, where it generally remains. Sometimes, however, it comes down into the plains, where it is especially seen on the rocks surrounding mountain torrents, or on the walls of old buildings. It builds its nest the last days of March, and the beginning of April; and for this purpose it chooses a rock or ruined wall, where among the projections it can be sheltered from the rain. It is easy to observe with what caution this bird makes choice of a locality, for before it finally resolves to build its nest in a particular spot, it places some of the materials, which consist of resinous substances mixed with feathers, hair, rootlets, thread, or wool, in several different places. This is evidently done to satisfy itself, not only that it may not be discernible to others, but that it may be impervious to wet, and sufficiently firm a foundation to last many years. Indeed it would be quite impossible to move the nest of *Sitta Syriaca* from the place to which it is fastened, nor could it be distinguished from the parts to which it is attached,

were it not that the dark shades of the entrance hole sometimes reveal its existence. One which I recently found near the town of Magnesia, on a commanding rock, had a diameter of ten inches, and very nearly six in depth. The upper wall was three inches thick, and the sides and under wall about four fifths of an inch, while the depth of the neck and entrance hole was two inches. The weight of the whole was upwards of five hundred drachms, (sixty-three ounces!) allowing for that part of it which I could not cut away from the rock. It is quite clear that this bird cannot build every year a new nest so large and heavy, but that it must last a long time, even for a whole life. Round the hole, which is chosen for the building of the nest, and also over the nest itself, is a quantity of resin, which is mixed with the other materials, and with earth. This resin it gets especially from *Pistacea terebinthus* and *lentiscus*. When melted by the warmth of the sun, it runs down and gives the nest a very firm hold of the rock, and will bear a great weight.

Having mixed together feathers and fibres with clay and cement out of the water, to which hairs and threads are sometimes added, it shapes its nest in the form of a flask, with a round opening of one inch and one fifth in diameter. The inside of the nest is more regular than the outside, but not very smooth, both having throughout a granular surface, which is covered by the small pieces of earth stuck one above another. The outer side differs also from the inner, in being covered with resin and a red sticky mass, perhaps taken from the poplar. When this is melted by the sun it not only makes the whole impervious to wet, but makes it in appearance similar to the wall on which it is placed. It is not possible to examine this structure without

being struck with its beauty and adaptation. The inside is lined with feathers, wool, and threads. It lays five or six eggs."

The eggs are larger than those of the Common Nuthatch, four or five in number, slightly elongated, white, with pale brick-red spots, principally at the larger end.

The male and female are alike in plumage. All the upper parts are of a slaty blue; the ends of the closed wings being rich hair brown; the throat, sides of the head, and chest white; abdomen, flanks, and under tail coverts russet; from the angle of the jaws, through the eyes and ear coverts, and extending to the scapularies, is a distinctly defined black band; tail feathers brown, with their ends slightly tipped with russet. Beak and feet black.

My figure is taken from a specimen shot on February 22nd., 1858, on Mount Taygetus, and kindly sent me by Mr. Tristram. The egg is from Thienemann.

The bird has also been figured by Bonaparte, Faun. Ital., pl. 26, f. 2, and Gould, B. of E., pl. 235.

I do not consider it necessary to give a figure of the Asiatic variety of *Sitta Europæus*, namely, *S. Uralensis*, Lichtenstein, *S. sericea*, Temminck, as I do not find any specific distinction between the two forms. *S. Uralensis* is found in the Caucasus and Siberia. By Pallas it was denominated *S. Europæa*, var. *Sibirica*. The only asserted difference given by authors is that the flanks are not rufous, as in the Common Nuthatch. This is very much the same as making two human beings of different species, one of whom had flaxen and the other red hair.

ANISODACTYLI.

Family CERTHIIDÆ. (Bonaparte.)

Genus Tichodroma. *(Illiger.)*

Generic Characters.—Beak very long, slightly arched, slender, cylindrical, angular at its base, and depressed at its point. Nostrils basal, naked, pierced horizontally, half closed by an arched membrane. Feet with three toes in front, the external attached at its base to the middle toe by a membrane; the hind toe carrying a very long claw. Tail round, with the shafts of the quills feeble. Wings with the first primary short, the second and third tapering, the fourth, fifth, and sixth the longest.

WALL CREEPER.

Tichodroma muraria.

Tichodroma muraria,	Illiger.
" *alpina,*	Koch.
" *phœnicoptera,*	Temminck.
Certhia muraria,	Gmelin.
Tichodrome echelette,	Of the French.
Gemeiner Mauerläufer,	Of the Germans.
Picchio murajolo,	Savi.

Specific Characters.—Two round spots on the inner web of the first four true primaries, and one upon the fifth; the basal half of all the true primaries, except the first, and of the secondaries

WALL CREEPER.

rich crimson. Length six inches and a half; carpus to tip three inches and three quarters; tarsus nine lines; hind toe and claw one inch; beak one inch and one fifth.

This beautiful bird, so well known to the alpine traveller, is common in Switzerland, Spain, and Italy. It is a southern bird, frequenting the rocky parts of the warmer countries of Europe. It is found in France and the south of Germany, and is not rare in the highest Alps in the Tyrol. It occurs also in Bohemia and Silesia, and is included by Count Mühle among the birds of Greece, and hence it ranges to India, being mentioned by Dr. Leith Adams as occurring in Cashmere, by the sides of rivers and streams in rocky and precipitous places.

It does not appear ever in flocks anywhere, being generally found solitary or in pairs. When the rough weather of autumn sets in, it is driven from the high mountains, and appears about the valleys and mountain towns during the winter months. In the spring it again gradually mounts up until it settles for breeding purposes among the highest rocks of the mountain top.

Wherever it is seen, whether in mountain, or valley, or town, it is always found among rocks, running up and down their perpendicular faces, and peering into every nook, cranny, or cleft for its insect food.

In its habits the Wall very much resembles the Tree Creeper, being lively, restless, and shy on the approach of man. It clings with great tenacity to perpendicular or horizontal rocks. It runs upwards with great dexterity, but does not, like the Woodpecker, run downwards. After a short rest it flies down from the top of even the highest towers, and then re-commences its upward ramble. It does not appear to use its tail as

a *point d'appui* like its congeneric species, but goes with a low spring from one rough spot to another, until it gets to the top, when it flies down again, and so on for a whole day. It is not seen on the ground.

Naumann tells us the Wall Creeper is unsociable and quarrelsome with its kind, and hence it is always solitary. Even the young separate early. The call-note is said to be similar to the Bullfinch, and it has also a shorter note when running up the walls, in which the short strophe di, didi, zaa, is often kept up with very little variation. Both male and female sing, and during the performance they raise their bodies, and move their wings and tail, or flutter them upon the rocks.

It feeds on insects and their larvæ and eggs, spiders, ants, etc., all of which it pokes out of the crevices with its long curved beak.

It builds in high places which are very difficult to get at—in chinks of barren rocks, or in the holes of walls and old buildings or towers. Little indeed was known about the nidification of this bird until about ten years ago, when Nager-Donaziane, of Unsen-Thale, discovered the nest and eggs, and supplied his friends with specimens, of which a true description was first given by the Baron V. König, in "Cabanis' Journal fur Ornithologie," for 1855. The nest is built of an underlayer of soft dry stalks, mixed with moss, hair, soft feathers, and wool, and is lined with animals' hair. It lays from three to five eggs in June, which are either pear-shaped or more generally oval. The shell is slightly shining white, with small red or flesh-coloured spots and dots, which are most numerous at the larger end. They are about the same size as those of the Wryneck.

The male in breeding plumage has the top of the

head, rump, and under tail coverts, blackish grey; nape and back grey; cheeks, throat, and front of neck deep black; abdomen black; the under tail coverts tipped with white; wing coverts and basal half of the external web of the wing feathers of a deep crimson; the rest of the feathers blackish brown, with two large round spots on the internal web of the first four true primaries, and one on the fifth. Secondaries tipped with white; tail black, with the two most external quills broadly terminated with white, and the others more narrowly with grey. Beak, feet, and iris, black.

The male in autumn and winter is of a distinct grey above, with a slight russet colour on the head; the throat and chest white, slightly tinged with the same; the dark parts of the abdomen are less deep than in spring.

The female resembles the male in winter plumage.

The young of the year have the primaries and tail quills tipped with grey, and the colours above and below less pure than in the adult. After the first moult the two sexes and the young are alike in plumage.

My figure is taken from a skin in autumn plumage, killed at Geneva, and kindly sent me by Mr. Tristram. The egg is from a specimen sent by the same gentleman.

The bird has been also figured by Buffon, pl. enl. 372, fig. i. male in spring, fig. ii. male in autumn, given as the female. Roux, Ornith. Prov., pl. 238; Bouteil, Ornith. du Dauph, pl. 37, f. 4; Naumann, Vogel Deutschands, pl. 141, male in summer and winter plumage; Gould, B. of E., pl. 239.

Order VII.—ALCYONES.

Family MEROPIDÆ. (Bonaparte.)

Genus Merops. *(Linnæus.)*

Generic Characters.—Beak middle sized, sharp edged, pointed, and slightly curved, the summit elevated and entire. Nostrils basal, lateral, ovoid, and open, the opening hidden by having feathers directed forward. Feet with the tarsus short; of the three toes in front the most external is united up to the second articulation of the middle toe, and this with the internal up to the first articulation; the hind toe broad at its base; claws—that of the hind toe the smallest. Wings—the first primary very short, the second the longest in the wing.

BLUE-CHEEKED BEE-EATER.

Merops Persica.

Merops Persica,	Pallas; Voy., 1776.
" *Savignyi,*	Cuvier. Swainson.
" *Ægyptius,*	Forskahll.
" *superciliosus,*	Rüppell.
Guépier Savigny,	Le Vaillant.
Guepier meridional,	Of the French.
Südlicher Bienenfresser,	Of the Germans.
Blue-cheeked Bee-eater,	Swainson.

Specific Characters.—Throat yellow; upper part of neck anteriorly, russet red; upper plumage various shades of green; superciliary ridge and a band below the eyes turquoise blue. The

BLUE-CHEEKED BEE-EATER.

two middle tail feathers much longer than the others. Length from tip of beak to end of long tail feathers twelve inches; carpus to tip, five inches and three quarters; tarsus half an inch; beak one inch and three quarters; tail six inches.

The Blue-cheeked Bee-eater is an inhabitant of Persia and Egypt, being found especially on the borders of the Caspian Sea. It extends along the shores of the Mediterranean Sea through Tripoli, Algeria, and along the Atlantic coast as far as Senegal; while, eastward, it ranges, according to Dr. Leith Adams, into the north-west of India, where it is not uncommon.

As might be expected, it is occasionally found on the European side of the Mediterranean, where, however, it occurs only accidentally. It was introduced into the European list by Bonaparte, from two specimens which were killed in the neighbourhood of Genes. It is also included by Count Mühle among the birds of Greece, while Dr. Leith Adams informs me that it is found (but rarely) in that neutral territory, Malta. It is recorded ("Ibis," vol. i, p. 27,) by Mr. Tristram as occurring in the valley of the Jordan in Southern Palestine; by Mr. Taylor (ibid, p. 47,) as very abundant in small flocks in Egypt; and Dr. Heuglin says it occurs in large flocks on the Somali coast of the Red Sea.—(Ibid, vol. i, p. 340.)

In its habits the Blue-cheeked Bee-eater resembles the better-known species in our own fauna, *Merops apiaster*.

The male and female have the forehead marked by a white band; above the eye is a band of turquoise blue, with a similar one below, which is, however, slightly mingled with white feathers; from the angle

of the beak straight through the eye is a band of dark green. All the upper parts of the body green, more vivid on the rump, and from thence shading off along the long tail feathers into green russet, while the tips are black. The wing primaries dark green, with the most internal part of the broad inner web dusky brown, shading off into black towards the tip; under wing coverts and flanks a rich chesnut, like the chest, while the rest of the under parts of the wing, and those of the tail, are glossy hair brown. Throat yellow, going off into a darker chesnut on the crop; sides of the neck, abdomen, and under tail coverts, vivid Scheele's green; beak black; feet horn brown.

Temminck notices two varieties in his "Manual," fourth part, 1840, p. 651. The var. A, are specimens from Senegal, which, he says, differ in some of the tints of the plumage, by having the two middle tail feathers longer, and by having shorter wings—differences which are seriously recommended to species makers. This variety has been figured by Bonaparte, in his "Fauna Italica," and by Le Vaillant, pl. 6, bis.

The other variety, B, which is that which I have figured, from Nubia and Egypt, has less blue in the green of the upper plumage, the middle tail feathers are rather shorter, and the wings slightly longer, reaching near to the end of the lateral tail feathers. This is Le Vaillant's *Guepier*, pl. 6. In my specimen, which was kindly sent me by Mr. Tristram, and marked "Egypt," the wings, when closed, do not reach to within an inch of the end of the lateral tail feathers.

There is still another variety, found in Japan, the *Merops Javanicum* of Horsfield, which is, however, easily distinguished by its bright blue rump.

According to Bonaparte, *Merops Persica* of Pallas

is different from the *Merops Savignyi* of Swainson, a statement which it is impossible to admit for a moment. The bird I have figured is in all particulars precisely the bird described by Swainson as *M. Savignyi*, the Blue-cheeked Bea-eater, "Birds of Africa," vol. ii, p. 77, pl. 7.

Figured by Le Vaillant, Hist. Nat. Promer, pl. 6 et 6 bis; Swainson, Birds of Africa, vol. ii, pl. 7; Bonaparte, Fauna Italica, pl. 25, fig. 1.

ALCYONES.

Family ALCEDINIDÆ. (Bonaparte.)

Genus Alcedo. *(Linnæus.)*

Generic Characters.—Beak long, straight, quadrangular, pointed, sharp edged, and very rarely depressed. Nostrils basal, lateral, obliquely pierced, and almost entirely closed by a naked membrane. Feet short, naked above the knee; three toes in front, the exterior of which is joined to the middle toe as far as the second articulation, and this with the inside toe as far as the first articulation. Hind toe broad at its base, and its claw the smallest. First and second wing primaries shorter than the third, which is the longest in the wing.

BLACK-AND-WHITE KINGFISHER.

Alcedo rudis.

Alcedo rudis,	Linnæus.
" *ispida ex albo et nigra varia,*	Brisson.
" *ispida bicinta et bitorquale,*	Swainson.
" *cerylevaria,*	Strickland.
Ceryle rudis,	Boie. Bonaparte.
Martin-pècheur pie,	Of the French.
Geschäckter Eisvogel,	Of the Germans.

Specific Characters.—Feathers of the occiput long and pointed; tail with a broad black band, tipped with white at its end; a broad black band across the crop, interrupted in the middle. Length from tip of beak to end of tail eleven inches and a half;

from carpal joint to tip of wing five inches and a half; tail two inches and a half; beak two inches and a half; tarsus one third of an inch; middle toe and claw one inch.

This bird is only an accidental visitor to the European shores. It has been observed in Turkey, Greece, Italy, and Spain; generally near the coast, on the European borders of the Mediterranean. In Africa it is most plentiful at the Cape and in Egypt. Swainson considered the Senegal species as distinct, and described it in his "Birds of Africa" under the name of *Ispida bicinta*, the Double-collared Kingfisher. It is found rarely, and only accidentally, in Algeria. One specimen only was seen by Mr. Tristram near Jordan, in Southern Palestine. It is stated by Mr. Taylor, in his Egyptian Reminiscences, ("Ibis," vol. i, p. 47,) to be abundant all the way from Alexandria to the First Cataract. In Asia we find it occurring in Turkey, Persia, India, and China.

In its habits it resembles the other Kingfishers. Mr. Taylor (Op. cit.) says it is very tame and familiar in Egypt. "The food seems to be entirely fish. I have often watched it hovering over a shallow pool of water, and every now and then darting down and catching fishes, sometimes as much as three or four inches in length. This bird breeds in holes in the banks of the Nile."

In the colony of Natal Mr. Gurney ("Ibis," vol. i, p. 245,) informs us, that "it frequents the lakes and rivers near the coast; not found in the interior. This bird hovers over the water before darting down, and if not successful flies on further, and hovers again; having caught a fish, it flies to a bough or post to swallow it."

Mr. Swinhoe also, in his very interesting paper on the Ornithology of Amoy, ("Ibis," vol. ii, p. 49,) says that it is "very common on the river, where it is to be found at all seasons; it poises on the wing at a height above the water, and drops suddenly down to catch its prey. I have however seen it strike obliquely, when flying close to the surface of the water."

Like other Kingfishers this bird makes a nest in the holes of banks of rivers, and lays four or five eggs, which are white, glossy, and nearly round.

The plumage of the Black-and-White Kingfisher is very difficult to describe minutely, as almost each feather, as Swainson remarks, is varied in a different manner.

The male in breeding plumage has the crown of the head and its crest black, with longitudinal streaks of white; all the rest of the upper parts are a mottled black and white; primaries and tail black and white; the white line which springs from each nostril is "carried over the eye and ears, and is lost in the variegated feathers of the crest." All the under parts are pure glossy white, with a broad belt of deep glossy black across the chest, narrowed or interrupted in the centre; the flanks thinly striped with black. The iris, beak, and feet black.

According to Degland the female is rather less, has more white in the plumage, the black collar less extended, and sometimes there is a second, which may probably have caused Swainson to describe the Senegal species as distinct. He certainly gives no separate distinction of the sexes.

Before the first moult, the white of the upper parts is less pure, with a number of black dashes; the black collar on the chest is only faintly indicated by

black spots; the beak is sensibly shorter than in the adult.

My figures of the bird and its egg are from specimens kindly sent me by Mr. Tristram. The bird is marked "Egypt, March, 1858."

It has been figured by Buffon, pl. enl. 62, young, 716, adult male; and Gould, B. of E., pl. 62.

Order VIII.—CHELIDONES.

Family HIRUNDINIDÆ. (Bonaparte.)

Genus Hirundo. *(Linnæus.)*

Generic Characters.—Beak very short, very much depressed, and broad at the base; upper mandible curved downwards at the point. Feet short, with three toes in front entirely divided, or united at the base only by a short membrane; claws much curved; wings long and pointed.

ORIENTAL CHIMNEY SWALLOW.

Hirundo rustica, var. *Savignyi.*

Hirundo Savignyi,	Leach. Stephens.
" *rustica orientalis,*	Schlegel.
" *Cahirica,*	Lichtenstein; Cat., 1823.
" *Riocourii,*	Audouin; Des. de l'Egp., vol. 13.
" *Boissonneautii,*	Temminck; Man. 3, p. 652.
Cecropis Savignyi,	Boie; Isis, 1828, p. 316.
Horondelle de cheminée orientale,	Of the French.
Ostliche Rauchschwalbe,	Of the Germans.

Diagnostic Characters.—Under parts of the body, from the crop to the base of the tail, of a dark chesnut. Length six inches; carpus to tip four inches; tail from base to end of lateral feather three inches; tarsus five lines; beak from gape to end of upper mandible seven lines.

This "permanent variety" of our English Swallow is found principally in Macedonia, Egypt, and Eastern

Siberia. It is very common in Egypt, but is only found accidentally in Europe,—Spain and Greece being the localities noted by Temminck, Mühle, Lindermeyer, etc.

Professor Blasius, in "Naumannia," 1859, p. 254, has a paper upon this bird, which I will transcribe nearly entire, as it not only expresses all we know about it, but contains some useful remarks upon the difficult question of "species."—

"At a meeting in Cöthea we learned through Olph-Gaillard, that *H. Cahirica*, Licht., was taken by Nager-Donazians, at St. Gothard, and the specimen was exhibited. Later Laudamman Nager wrote to me that this is there the only Chimney Swallow, and that during the spring passage it is sometimes caught by boys with the hand. I also received specimens which did not differ in intensity of colour from African specimens. We may reasonably express surprise at an Egyptian species coming to St. Gothard, particularly so regularly according to Andermatt. In the following spring Baldamus found this bird breeding and pairing with *H. rustica* in Diebzig, and I have one of these specimens now in my possession. In the present spring (1859) I have also seen these Swallows breeding in Brunswick, and paired with the common *H. rustica.* Many specimens were brighter than the Egyptian *H. Cahirica;* otherwise they resembled them. From other sources I have received intelligence that among Chimney Swallows individuals with red brown under sides have been found breeding.

Under these circumstances we can still affirm that this bird has been taken at St. Gothard; but it is not so clear that it is the only kind of Chimney Swallow which is found there. Dr. Glöger says that the very dark red House Swallow is very common in Sardinia,

and also in Eastern Siberia, where, according to Pallas, the Chimney Swallow has a remarkably rust-coloured under side. As the different coloured birds pair together, and as in the same nest there are to be found from normal coloured parents—both colours—it is evident that the varieties blend one with another, and as there is very little difference in the forms and habits, so it is not well to maintain that there is a difference of species. But how is this question to be viewed? For example as to climatic varieties? Our northern climate has under some circumstances produced the African form! No one can satisfactorily maintain that our northern dark rust-coloured Chimney Swallow was originally bred from the African! Nor can any one connect the one in the climate of Egypt with that in Eastern Siberia; far less can we deduce from the casual fact of the varieties pairing together, that the rust-colour of the Egyptian or Siberian Chimney Swallow is due to physical causes. The name climatic variety is only an arbitrary distinction."

"Or races? But races can only be comprehended with certainty within the same limits as climatic varieties. The young will without any intermediate form go back to that of the parents. Nature does not carry out this idea precisely."

"Perhaps sub-species? The comprehension of sub-species is so little established in theory, and is so variably demonstrated in practice, that it gives no bounds to capriciousness."

"In short, are local forms one and the same species? But is not that a name without all philosophical or physiological consideration? Perhaps all the better if philosophy or physiology stood on weak ground. A distinction founded on fact is at least remembered by

a matter of fact.* Would it not be advisable to make this matter of fact certain before we dispute about an idea? To do this we must know where the white and rust-coloured Swallows are known to dwell distinctly. How far, and in what statistic relation, the one form extends into the territory of the other, and in what relation there is a proportion between the two forms. We might then help each other to solve this riddle, and then we shall have no difficulty in being certain about the name."

This paper I think clearly establishes the fact of the identity of the variety which is the subject of the present notice with the Chimney Swallow. *They breed together*. Their habits and nidification are similar. They only differ in the colour of the abdominal plumage, in having a brighter black on the back, and perhaps a broader black collar round the neck.

The specimen sent me by Mr. Tristram, which I have figured, and the measurements of which I have given in my diagnosis, was killed in January, 1860, in Egypt, by W. C. P. Medlycott, Esq.

The plumage above is glossy black; below dark chesnut, with a broad black collar round the neck. Each of the tail feathers has a white spot on its inner web, giving the appearance of a crescentic band when viewed from beneath.

It has also been figured by Audouin, in plate 4, fig. 4, of his "Expedition to Egypt." The drawings in this work were done by M. Savigny, after whom Stephens, in his edition of "Shaw's Zoology," named the bird.

* I append the German text of this passage:—"Oder endlich gar Localformen ein und derselben art? Aber ist das nicht ein Name ohne alle tiefere philosophische oder physiologische Bedeutung! Vielleicht um so besser, wenn die Philosophie oder Physiologie auf schwachen Fussen steht. Eine thatsächliche Bezeichnung erinnert doch wenigstens an einen Thatbestand."

CHELIDONES.

Family HIRUNDINIDÆ. (Bonaparte.)

Genus HIRUNDO. *(Linnæus.)*

RUFOUS SWALLOW.

Hirundo Daurica.

Hirundo	*Daurica,*	LINNÆUS. SAVI; Orn. Tosc.
"	*rufula,*	TEMMINCK; Man., 3rd. Ed., p. 298. (excluding synonymes.
"	"	SCHINZ; Europ. Faun., vol. i., p. 250. (excluding synonymes.)
"	"	SCHLEGEL; Revue, 1844, p. 18 and 51.
"	"	DEGLAND; Ornith. Eur., No. 155, the male.
"	"	CRESPON; Faun. Mèrid., vol. i., p. 309, the male.
"	"	BONAPARTE; Rev. Crit., pp. 46 and 47. List of birds, (portion) No. 59. Conspect., p. 339, (excluding the synonyme of Rüppell.)
"	"	JAUBERT; Rev. Zool., 1854, p, 261, the adult only.
"	"	DE SELYS-LONGCHAMPS; Bulletin de L'Academic de Bruxelles, vol. 22, part 2, p. 125.

Hirundo alpestris,	Malherbe; Faune Orn. Sicile, (excluding synonymes.)
" "	Bonaparte; Intr. Faun. Ital.
" "	Keyserling et Blasius; Die Wirbelthiere, No. 201, (portion.)
" *Capensis,*	Durazzo; Ucc. Lig., No. 45.
Hirondelle Rousseline, rousse, or rufuline,	Of the French.
Rothliche Schwalbe,	Of the Germans.
Rondine di Siberia,	Savi.

Specific Characters.—Medium size. Top of the head, back, wings, and tail, black; the outer tail feathers for the most part faintly spotted with white; nape rufous, not striated; rump pale rufous, passing into whitish posteriorly; below the cheeks, and under wing coverts, russet, with very narrow brown striæ, which are however absent in the anal region; the posterior half of the under tail coverts black; feet moderate size. Length about seven inches; closed wings four inches and four fifths; external tail feathers four inches; tarsi half an inch; posterior toe (without claw) six tenths of an inch; posterior claw about a quarter of an inch.

This bird has been confounded with several others. It was first noticed by Savi, in 1831, in the "Ornitologia Toscana," Appendix to vol. i., p. 201, as *Hirundo Daurica*, Lin.—the *Rondine di Siberia.* It was afterwards introduced as a European bird in the second edition of Temminck's Manual, as identical with *Hirundo Capensis* of Gmelin, from which however it is clearly distinct. Temminck proposed for it the name of *Rufula,* which it retained through the many scientific difficulties it encountered after his time. Temminck's reasons for the change of name is hardly defensible. He thought

that it was not right to use the word *Capensis* for a European species, and he therefore translated the word *Rousseline*, given to the Cape bird by Le Vaillant, into *Rufula*. The next difficulty it had to encounter was from the Prince of Canino, who, after adopting the name of Temminck in his "List," in 1838, applied the name *Alpestris* in his "Catalogo degli uccelli Europeì," in 1842. In his "Revue Critique de l'ouvrage de Docteur Degland sur les Oiseaux d'Europe," in 1850, he further adds to the confusion by describing it as a miniature *Hirundo Senegalensis*, although it is at once distinguished from that bird by the black apex of the under tail coverts. He also united it with another distinct bird, the *H. melanocrissa*, of Rüppell. Schlegel, in his "Revue Critique des Oiseaux d'Europe," of 1844, was the first to notice the confusion of the true *H. rufula* of Sicily with its congeners, namely, *H. Capensis*, *H. alpestris*, *(Daurica,)* *H. Senegalensis*, and *H. striolata*.

Keyserling and Blasius, in "Die Wirbelthiere Europas," 1840, describe as a European species the *H. alpestris* of Pallas, and identify it with *H. rufula*. Schinz, following Temminck, confounds *H. rufula* with *H. Capensis;* while Degland, in his Ornithologie Europeene," in 1849, describes the male bird with the omission of the important character of the termination in black of the inferior tail coverts; but for the female he again falls back, and gives a description of *H. Capensis*, in which mistake he is followed by M. Crespon, in the "Faune Meridionale."

Gould figures *H. Senegalensis* for *H. rufula*. Lesson, in his "Traité Ornithologie," 1831, confounds *Rufula* with both *Senegalensis* and *Capensis*. Rüppell figures *H. melanocrissa* for the first time, in 1845, in his

"Systematische Ubersicht der Vogels Nord-Ost Africa;" and Bonaparte at once claims this bird as *H. rufula*. After which we cannot wonder that Blyth, Sykes, Hodgson, and Gray should more or less have confounded its synonymes.

M. De Selys-Longchamps has removed all this confusion by an admirable memoir upon the Swallows, in the work which I have referred to in the specific characters. I am indebted to this memoir for most of what I have to say about *H. rufula*.

The Rufous Swallow has been observed in Greece, on the Italian shores of the Mediterranean, and in the South of France. It is not observed in the two latter countries commonly, but accidentally on its passage in April or May, in couples or flocks more or less large. It has been frequently observed in Sicily. At Messina, according to Luigi Benoit and Cantraine, it was common in 1832. The Marquis Durazzo has recorded its appearance at Genoa; M. Crespon, at Nimes; M. Jaubert, at Marseilles. According to Lunel it nested in the neighbourhood of Avignon, in 1845 and 1846. He describes the eggs as white, with small reddish spots and points, which formed a zone at the greater end, which indicates that he did not get the egg of *H. Daurica*. M. Jaubert has also observed it at Montpellier, and M. Malherbe in the Cote-d'or and the Drôme.

Mr. Tristram remarks, (Ibis, vol. i., p. 26,) "*H. rufula* appears to be the Common Swallow of the Holy Land. I cannot be sure that I saw *H. rustica* at all, though possibly it might not yet (April) have returned from the south."

De Selys (Op. cit.) remarks about its real country as follows:—"The question was formerly asked from

whence came our Domestic Swallows? It is now known they pass the winter in Africa; but this question may be still asked with good reason as to *H. rufula.* From whence does it depart, and what is its true country? No ornithologist has yet (1855) been able to answer this question. We only know the bird from its accidental appearance on the shores of the Mediterranean. Those who took it for *H. Daurica,* (*H. alpestris,* Pall.,) thought it came from Siberia, and this presumption might be justified by the simultaneous appearance in the same parts of the Mediterranean of many Siberian birds, such as *Emberiza rustica, E. aureola, E. pityornus, E. pusilla, Accentor Calliope,* etc.; but if *Rufula* is very nearly allied to *Daurica,* there is still a difference between them; nor has it yet been found in Russia, or upon the coasts of the Black Sea. Prince Bonaparte seemed to have settled the question, by claiming its identity with *H. melanocrissa* of Abyssinia, but unfortunately we have seen that they are distinct."

"*H. rufula* being as we may say intermediate between *H. Daurica* and *H. melanocrissa,* I am led to believe, in the absence of further proof, that its home must be one of the mountainous countries situated between Egypt and India, probably the mountains in the south of Armenia or Persia. I exclude for the present the hypothesis of Barbary, as it has not yet been met with in Algeria or Spain."

"As far as we know of *H. rufula,* and until we can in a more positive manner determine the differences which age may introduce between this species and its congeners, it is distinguished from *H. Daurica* by the exceedingly fine brown streaks on the inferior parts of the body, by the larger russet collar, and by the

russet of the rump, which passes decidedly into a whitish tint posteriorly.

"It is distinguished from *Melanocrissa* by the presence at all ages of the streaks on the under parts; by the absence of the anal russet border; by the less deep russet of the collar; by the brighter red on the rump passing into white posteriorly; and by the whitish spot which almost always is found on the external tail feather."

Since the above was written by M. De Selys, we have further accounts of this bird, which not only verify his prognostication as to the true country, but appear to remove all doubts as to the identity of *H. rufula* and *H. Daurica*. I allude to the observations of Mr. Tristram, before noticed, that it entirely takes the place of *H. rustica* in the Holy Land and in Egypt. Also to the still more important and interesting account given of *H. rufula*, by Mr. Simpson, (Ibis, vol. ii., p. 288,) where he describes it as inhabiting Missolonghi and Southern Ætolia, and further gives some most interesting accounts of its nidification in Western Greece, in the same volume, p. 386. Mr. Simpson describes the egg as white, which is further proof of the identity of this bird with *H. Daurica*.

M. Ed. De Selys-Longchamps has very kindly sent me his Grecian specimen, which I have had very carefully figured; and through the kindness of Mr. Tristram, I am also able to figure one of the eggs taken by Mr. Simpson, in Greece. M. De Selys accompanied the specimen with some valuable remarks, from which I extract the following:—

"As to *Hirundo rufula*, my statements are quite verified as to its country being the mountains of Eastern Asia, since Mr. Tristram (Ibis, vol. i., p. 27,) indicates

it as the Common Swallow in the Holy Land. It must, however, be added to this that it inhabits Greece regularly, and not accidentally. (Ibis, Oct., 1860, p. 386, Mr. Simpson.) This observer gives valuable information in saying the eggs are quite white, like those of *H. urbica*. It is then more than probable that M. Lunel made a mistake when he said they were spotted. This discovery as to the eggs and that of its true country, confirms me in my belief that this species is identical with *Daurica*, as I had before supposed. I have in reality received from Siberia specimens of *Daurica* which have the nuchal collar complete, and as to the brown streaks below the body being more or less marked, they are no doubt so according to age, of which I have proof in its congener *Melanocrissa*. The name of *Daurica* ought to stand with the addition of a very doubtful race, which may be called *Rufula* —*H. rufula?*

"Edward Newton's Swallow, (Ibis, 1859, p. 462,) seen between Cairo and Alexandria, in Egypt, was probably *H. melanocrissa*. M. Jaubert, of Marseilles, has, I believe, figured and described in his work, 'Richesses Ornithologique, etc.,' the *H. rufula* of Marseilles. The work being at my country residence, I cannot quote it with certainty at this moment. My mounted specimen is without indication of sex."

In accordance with the opinion expressed by M. De Selys, I have sunk the name of *Rufula*, and adopted that of *Daurica*, leaving it for future observers to determine whether there is or not a race to which the name *Rufula* may yet be given.

In Mr. Simpson's very interesting account of some of the Birds of Western Greece, (Ibis, vol. ii., p. 386,) I extract the following about the nesting of *H.*

Daurica:—"*H. rufula (Daurica)* is still more singular in its nidification, always fixing its nest under a cave or projecting slab of rock. In the little Klissoura, and throughout the precipices of Aracynthus, there are plenty of these caves, in former times a convenient refuge for the Klephtsas; they are now for shepherds tending their flocks during the winter months. This eccentric Swallow, not satisfied with having a good dry cave all to himself, must needs construct a long passage to his nest; thus giving it the shape of a retort, with the upper part cut away, and the remaining portion glued underneath a flat surface. The entrance is narrow, but the passage gradually widens till it finally opens into a sort of chamber, very warmly lined with feathers; here the little fellow and his mate are sure to be most snugly tucked in just after sundown, when they cannot see to catch any more insects. Escape therefore is impossible when a ruthless ornithologist wishes to capture the pair for the sake of identifying their eggs. No more than one pair ever seem to occupy a cave, though the remains of previous nests could occasionally be traced on the roof. The same pair appear to return year after year, and their nest, unless injured by shepherd boys during the winter, will merely require a little touching up to render it again habitable. The fact of the same birds returning was proved by these caves being untenanted, where the pair had been captured during the preceding year. Several nests with eggs were found towards the end of May and beginning of June, 1859. Four seems about the complement; they are quite white, much resembling eggs of *H. urbica*, which could be well passed off for them in collections.

"A curious circumstance in connection with one of

these nests occurred to Dr. Krüper and myself, in a cave at the entrance to the little Klissoura. Fastened to the roof of this cave, (which was on the face of a low cliff, and not easy of access,) we espied a very good nest of *H. rufula*, (*Daurica*,) upon which Dr. Krüper proceeded to operate with a penknife, whilst I placed my hand over the mouth of the passage. Presently something that felt cold, like a dog's nose, began rubbing against the palm. On withdrawing the hand a thick snake poked his head out of the aperture, looked around for awhile, and then popped in again. He was in very good quarters, and evidently intended to take a lease of the premises, which just suited him, as he could coil himself up in the bulb of the retort, with his head and neck stretched out along the passage, in readiness for any emergency. We soon had him sprawling on the floor of the cave, when it became apparent that he had swallowed a full-grown young Swallow; the other three being in all probability destined for a similar fate. The sensations of those wretched little victims, lying in such close contact with their horrible enemy, must have been somewhat akin to those of Ulysses and his companion in the cave of Polyphemus. In the destruction of the nest two of them made their escape; the fourth was captured and preserved by Krüper, together with the first, which, on being cut out of the body of the snake, was found to be very little injured as a specimen. The walls of the cave were smooth and nearly perpendicular; the roof at least seven feet above the floor, and no cracks visible; how then could this monster have wriggled himself into such a well-stocked larder?"

Mr. Simpson further informs us that every European species of *Hirundo* and *Cypselas* (except, perhaps, *H.*

riparia,) may be found breeding in Mount Aracynthus. *Hirundo rupestris* is the only Swallow which winters in Greece.

H. Daurica has the top of the head and back metallic black; wings and tail dull black; cheeks and auditory region yellowish grey; nape and lateral parts of the occiput russet; rump tawny red, passing into yellowish white on the posterior half; throat, chest, abdomen, under tail and wing coverts, whitish, washed with russet, especially on the chest and flanks, and finely striated with brown, more distinct on the crop and throat; the terminal moiety of the under tail coverts, well-defined metallic black; beak and feet blackish, the latter slender. The external tail feathers have almost always on their inner barb a small, whitish, oval spot, not well defined, and placed slightly in advance of the base of the feather, which is covered by the inferior coverts. M. De Selys informs us that M. Jaubert has a specimen which has a well-marked white spot on one of the great tail feathers, while the other is quite black.

As I have before mentioned, I am indebted to M. Ed. De Selys-Longchamps for the Grecian specimen which I have figured. I return him my very best thanks for this obligation. The egg is from Mr. Tristram, and is marked "Æ. M. 31—59. W. H. S."

CHELIDONES.

Family HIRUNDINIDÆ. (Bonaparte.)

Genus HIRUNDO. *(Linnæus.)*

CRAG SWALLOW.

Hirundo rupestris.

Hirundo rupestris,	SCOPOLI; 1768.
" *montana et rupestris,*	GMELIN; 1788.
Cotyle rupestris,	BOIE. BONAPARTE.
Ptyonoprogne rupestris,	BONAPARTE.
Hirondelle de rocher,	OF THE FRENCH.
Felsenschwalbe,	OF THE GERMANS.
Rondine montana,	SAVI.

Specific Characters.—Upper parts ash grey, more or less dark according to age; primaries dark smoky brown; tail dark brown, the two upper and two most external tail feathers unicolorous; all the others having a large round white spot on the inner web. Length of tip of beak to end of long wings when closed six inches and a half; from carpus to tip five inches; tarsus five lines; beak seven lines; tail two inches and a half.

THE Crag Swallow inhabits Sicily, Sardinia, the Alps and Pyrenees, the north of Africa, and the eastern parts of Asia. It is also found in the Appenines, and in Tuscany, in Greece, and the Ionian Islands. We have also records of its appearance in Egypt and the rocks bordering the Chiffa, in Algeria. In India, Dr.

Leith Adams informs me that it is generally distributed over the Nilghiris Mountains, in Madras, and on certain parts of the Western Himalayas. In the Epirus we are informed by Lord Lilford, (Ibis, vol. ii., p. 234,) it is common and resident, "haunting the high and precipitous mountains of the interior in summer, and coming down to the coast during the winter months." In the same Journal, (vol. i., p. 46,) Mr. Taylor informs us that it is the most abundant of the Swallows above Cairo. "I found a nest of this species on the 25th. of January, in the grottoes of Ben-Hassan, containing two eggs nearly ready to hatch. Both nest and eggs much resembled those of the Common Swallow."

In his "Vögel Griechenlands," p. 118, Lindermayer says, "*H. rupestris* is a resident bird in Greece, and found plentifully in the low neighbourhoods in winter, flying in large flocks over the swamps and the low level grounds near the sea. In summer it is only seen in the high mountains. I have in the early days of March, 1845, killed many specimens in the mountains of Athens. Krüper found a nest with eggs in Akarnania and on Parnassus."

Count Mühle, in his "Beitrage Zur Ornithologie Griechenlands," page 81, says,—"In summer *H. alpestris* is only seen on high mountains, such as Taygetus, Œta, Velugi, etc. In cold clear winter days it first approaches human dwellings, and extends solitarily among them, and is seen in waving flights over the towns, which resemble much more the Bee-eater than the Swallow. Here they pass the winter, for I have shot them plentifully in the end of December."

From Degland I take the following:—"*H. alpestris* is sufficiently common in Switzerland, in Savoy, and in the Pyrenees. I have received it from Bagnerre-di-

Bigorre and Grenoble. M. Gerbe informs me that it is abundant in the department of the Basses-Alpes, near Moustiers, and in the Var among some of the high mountain rocks which border the River Argent. M. Crespon reports it from the department of Gard; and it is seen in its passage in some other spots in Provence, Languedoc, Anjou, and the department of Isère. It builds among the clefts in the anfractuosities of the rocks, making a nest of tempered clay, small straws, and feathers. It lays five or six white eggs, spotted with red, dark rust, or brown."

"This species flies more slowly than its congeners, and always in regions most elevated. It almost always seeks its food in an undulatory flight above the rocks it inhabits. It arrives in Italy and in the south of France before the other Swallows, and leaves last. M. Gerbe thinks that some individuals hybernate in certain parts of Piedmont, near the borders of France; because when the winter is not severe, it is not rare to see them in the months of January and February flying above the mouth of the Var, and at Nice above the river which passes through that city. As this species moults before it emigrates, which is peculiar to it, M. Gerbe also suggests that those individuals which appear in a season where generally they are not seen again, are the young ones of the last brood, and that a retarded moult has obliged them to remain in our climate."

The male and female have the upper plumage ash grey, with the wings and tail darker. Throat light fawn, gradually becoming darker on the chest and abdomen; under wing coverts dark smoky brown; under tail coverts hair brown; the tail feathers, with the exception of the two median, and the two external, have an oval white spot on their inner web; beak

1. RUFOUS SWALLOW.

2. RUSSET-NECKED NIGHTJAR.

blackish; iris hazel, or, according to M. Roux and M. Crespon, gold-colour.

According to Degland, the young before the first moult have the feathers of the upper parts bordered with russet; those of the inferior parts of a yellow russet, and the throat spotted with brown on a white ground.

My figure is after a specimen kindly sent me by Mr. Tristram, marked "Kedron, near the Dead Sea, March, 1858."

The bird has also been figured by Naumann, pl. 146; Vieillot, Faun. Fr., pl. 39; Roux, Ornith. Provence, pl. 142; Bouteil, Ornith. du Dauph, pl. 38, f. 6; Gould, B. of E., pl. 56.

CHELIDONES.

Family CAPRIMULGIDÆ. (Bonaparte.)

Genus Caprimulgus. *(Linnæus.)*

Generic Characters.—Beak very short, flexible, depressed, slightly curved, and cleft to beyond the eyes; superior mandible hooked at the point, furnished with stiff bristly hairs directed forwards. Nostrils basal, large, closed by a membrane, and partly covered by the feathers of the forehead. Feet with three toes in front and one behind; the anterior toes united as far as the first articulation by a membrane; the hind toe reversible; claws short, except that of the middle toe, which is long and serrated, so as to form a comb. Tail rounded or forked, composed of ten quills. Wings long; first primary shorter than the second, which is the longest.

RUSSET-NECKED NIGHTJAR.

Caprimulgus ruficollis.

Caprimulgus ruficollis,	Temminck.
" *rufitorques,*	Vieillot.
Scotornis trimaculatus,	Swainson; Birds of Africa, vol. ii.
Eugoulevent à collier roux,	Of the French.
Halsbandziegenmelker,	Of the Germans.

Specific Characters.—A collar of russet extending from the cheeks round the back of the neck, and joining on each side in front to a white spot on the throat; first primary shorter than the

third. Plumage having a general rufous tint. Length twelve inches; carpus to tip eight inches; tarsus one inch; middle toe one inch; claw pectinated. Beak from gape fourteen lines; breadth at base one inch; tail six inches and a half.

The Red, or, as I prefer calling it, the Russet-necked Nightjar, is a native of Africa, being occasionally found in various parts of Europe. The south of Spain and France, namely, Provence, Marseilles, Nimes, and Montpellier, are recorded as its European localities. To these, through the kindness of Dr. Leith Adams, I am able to add Malta, where a specimen was obtained by Charles Augustus Wright, Esq., from whose notes I copy the following:—

"In the spring of this year (1861) a native bird-stuffer sent me word of a curious Goat-sucker having been shot a few days previous, (in the middle of May,) at Emtalitep, a valley situate on the southern coast of this island. When I saw it the bird had already been set up, but the skin was quite fresh, and there is no doubt about its being a fine specimen of *Caprimulgus ruficollis*. * * In addition to the localities given by Degland, I know it is included in an unpublished list of Egyptian birds in my possession, compiled from various sources by Mr. W. C. Medlycott. As far as my information extends, it has never been known to visit Sicily, or any part of Italy, except Nice, where it has been occasionally met with. There appears to be no previous record of its capture in Malta. I am glad to say that the subject of this notice passed into my possession, and now occupies a conspicuous place among my Birds of Malta. *C. ruficollis* may be easily distinguished from *C. Europæus*, by its larger size, general rufous colouring, different proportionate length of primaries, two large white

spots on the throat, and the reddish collar from which it derives its name. *C. Europæus* is a very common bird in Malta during the vernal and autumnal migrations. Before the capture of this species, *C. ruficollis* was unknown as a Maltese visitor."

C. ruficollis is apparently a rare and local bird in Europe, except Spain. It is not mentioned by Mr. Salvin, in his interesting "Five Month's Bird-nesting in the Eastern Atlas," or in Lord Lilford's "Notes upon the Birds of the Ionian Islands," published in the "Ibis." Neither is it mentioned by Count Mühle, or Dr. Lindermayer, as a visitor to Greece.

In Mr. Tristram's "Notes from Eastern Algeria," however, I find the following, (Ibis, vol. ii., p. 374:)—"As evening drew near the Red-necked Goat-sucker, (*Caprimulgus ruficollis*,) flitted about the glades, and the note of the Scops-Eared Owl floated on the air, with its plaintive 'Maroof, maroof,' from which it derives its local appellation." It is also mentioned by Captain Loche as inhabiting the three provinces of Algeria.

Dr. D. Antonio Machado, in his "Catalogo De las Aves observadas en Algunas provincias de Andalucia, Sevilla, 1851," says of this bird,—"It inhabits the woody flat ground of the mountains; it appears in spring, and leaves again in October: very common. It has no nest, but places its eggs in hollows in the ground, or under the shelter of some shrub. It frequents the roads where there is much horse or mule traffic, and the vulgar notion is that it feeds upon the dung which it finds there; but it is much more probable that it is in search of the beetles which live among it, and which are its principal food.

I have ventured to place among the synonymes of this bird that of *Scotornis trimaculatus*, as it agrees in

every important particular with the description given by Swainson of that bird, in his "History of the Birds of Africa,"—"Jardine's Naturalists' Library," vol. viii., p. 70:—Singularly enough Mr. Swainson seems to have overlooked the fact that the European Nightjar has three spots on the *inner* web of the three first primaries, and has claimed for his bird this exclusive character. Mr. Swainson gives eleven inches as the length of his bird, which is rather shorter than that of *C. ruficollis*, but the other and more important dimensions are the same.

There is another point of difference which I cannot help thinking is accidental. Mr. S. says, "The first primary quill is half an inch shorter than the second and third, which are of equal length, and the longest, while the fourth is an inch shorter, and the fifth is one and one fourth inches shorter than the fourth."

If the end of the above passage is transposed, and read, "While the fourth is an inch and a quarter shorter, and the fifth one inch shorter than the fourth," the whole will apply with perfect exactitude, like every other part of the description, to *C. ruficollis*.

I have no account to offer of the nourishment, habits, and nesting of this bird. But they are not likely I think to differ much from its European and closely-allied congener. There is the same wide mouth, with its array of bristles, and the same comb to clean them with on the claw of its middle toe. What a beautiful adaptive provision is this comb. Looked at through a lens, the teeth of the comb are seen to be placed with perfect regularity, and are admirably adapted to their evident use—to *clean* the bristles, an act which Dr. Maclean tells me he has actually seen performed by our Goat-sucker. The bristles are required

as a fence for the large mouth, out of which otherwise many an insect would slip away. But the bristles get clogged up, and the God who made this bird has provided it with as perfect a comb to clean them with, as is to be found on the table of any lady in Europe! I should like to know how such a provision could have been given by "natural selection," or "variation," or by any other "aid to theory," which Mr. Darwin or Dr. Asa Gray would assign as the means by which this beautiful adaptation was produced? To imagine that this comb on the claw of the long middle toe is an accidental variation, is to surrender common sense. Still more absurd would be the inference that such a variation could have been produced by successive steps through a long series of years. The bristles and the comb have a distinct relation to each other. They are parts of the organic structure of the being. Did they vary separately or simultaneously? Were they produced independently or in distinct relation to each other? How much more good would the Reviewers of Darwin do by going into questions like these, rather than giving us long and very often unintelligible and dull dissertations, in which fine writing is more aimed at than sound science. The physiological part of the question, evidently the most important, they seldom or ever touch.

The prevailing tint of the upper plumage is grey, more or less tinged with rufous, which is the prevailing colour of the wings and all the inferior parts. The head has the sides grey, with a broad band of rufous, and dark brown longitudinal spots between. The nape is composed of the rufous collar which gives the bird its name. Back and upper tail coverts and feathers grey, barred and striated irregularly with rufous and

dark brown. The scapularies and upper wing coverts light rufous, mingled with grey and rich dark brown. The lesser wing coverts, primaries, and secondaries, deep chesnut, barred with darker brown. The first three primaries have a large white oval spot on their inner web, each spot from the first being slightly nearer the tip of the feathers. The other primaries are tipped with grey, and more deeply bordered at the ends with the same colour darker.

The first primary is about half an inch shorter than the second and third, which are longest. The fourth is an inch shorter than the first, and the fifth one inch shorter than the fourth. Throat, cheeks, and chest, light rufous, with a large white spot on the former; abdomen still lighter rufous, finely barred with brown; under tail coverts fawn-colour. When closed the tail is grey above, divided into a cup-within-cup pattern, the intervals of which at the sides are fawn-colour; below the tail is fawn-colour, thickly barred with dark blackish brown, and terminating with white; the three lateral feathers on each side have this character above and below, while the rest are dark mottled brown, tipped and edged with fawn-colour. Beak black; feet and iris brown.

My figure is from a specimen sent me by Mr. Tristram, marked "Bojhar Forest, 29th. May, 1856."

It has also been figured by Vieillot, Faun. Franc., pl. 62, fig. 2; Roux, Ornith. Provence, pl. 148; Gould, B. of E., pl. 52.

Caprimulgus climaturus, the African Long-tailed Nightjar, is mentioned to me in a letter by M. Dubois, of Brussels, as having been accidentally captured in Europe.

Mr. Swainson has separated the Nightjars into two groups. In that for which he retains the name of *Caprimulgus*, the two lateral toes of the foot are of the same length; in the other the inner toe is longer than the outer, and these he has classed under the generic name *Scotornix*, and it is to this group that *Caprimulgus climaturus* belongs. It is here I think that classifiers err. There is no family so well marked as a family as the Nightjars. In colour they so much resemble each other, that it is impossible to designate by this character alone one species from another. Why then divide the genus? Because some few members of the family have a slight difference in the lateral toes, surely we have no right to complicate by dividing the genus! So long as their structure, habits, and ornamentation are similar, a slight deviation in the length of a toe is, with all deference to Mr. Swainson, insufficient to constitute generic distinction.

The claims of *C. climaturus* as a European species are, I think, too slight to justify me in introducing it into this work, further than by the present notice.

Foot of Russet-necked Nightjar, slightly enlarged.

Order IX.—COLUMBÆ.

Family COLUMBIDÆ. (Leach.)

Genus Columba. *(Linnæus.)*

Generic Characters.—Beak of medium size, compressed; base of the upper mandible covered with a soft skin, through which the nostrils are pierced, the point more or less curved. Feet with three toes in front, entirely divided, and one behind.

EGYPTIAN TURTLE DOVE.

Columba Ægyptiaca.

Columba Ægyptiaca,	Latham.
" *cambayensis,*	Temminck.
" *maculicollis,*	Wagler; Syst. Avium.
Turtur Senegalensis,	Bonaparte.
Tourterelle d'Egypte,	Of the French.
Ægyptische Turteltaube,	Of the Germans.

Specific Characters.—External border of the wings black; the upper and middle four tail feathers unicolorous; the most lateral ashy at their base, black in the middle, and bluish white at their distal ends; no black and blue collar on the neck. Length nine inches and a half; carpus to tip five inches and a half; tail four inches and a half; tarsus nine lines; middle toe and claw one inch; beak eleven lines.

N.B.—The above measurements are from the dry skin of the female specimen which is figured.

Greece is the European locality of the Egyptian Turtle Dove, and Asia and Africa its real home. Its name is derived from its frequent occurrence in Egypt; but it is also recorded as an inhabitant of Turkey by Degland, and of the Sahara in Algeria by Captain Loche.

Count Mühle, in his "Ornithologie Griechenlands," says, "I have shot this pretty Dove many times in summer, when drinking with the Common Turtle Dove, but until the last year I had not regarded it as a distinct species."

Dr. Lindermayer, writing as late as 1860, in his "Vogel Griechenlands," says that he has not hitherto found it; but he has had the eggs sent to him which he had mistaken for those of the Bee-eater, until after due inquiry he was set right upon this point by Herr Baron König-Warthausen. The eggs came from Attila. He from this inferred that the Egyptian Dove arrives about the same time as the Common Turtle Dove, breeds at the same places, and goes away with it, by reason of which Lindermayer considers it has been so little noticed. Erhardt does not include it in his list, nor has Krüper discovered the eggs. There cannot however be any doubt about its occurrence in Greece, because Mühle's description of the bird is very exact.

The male and female have the head, neck, and throat a beautiful pink, or flesh-colour, with the feathers under the base of the beak pure white. There is a *distinct collar* between the throat and the chest of pinky russet, which goes only to the nape, where it becomes blended with the colour of the back. From the nape to the rump, and to the edges of the wing coverts on each side, the colour is a rich lustrous russet brown,

1. EGYPTIAN TURTLE DOVE.

2. HAZEL GROUSE. 3. WILLOW GROUSE.

the scapularies being entirely of this colour, while in those parts at the sides which verge upon the wing coverts, the feathers are each bordered with a brighter russet. Primaries, rump, and upper tail feathers hair brown; upper wing coverts slate grey, lower dark brown; crop and chest a more vinous or darker flesh-colour than the head; abdomen and under tail coverts cream-colour; flanks and under wing coverts slate grey; under part of primaries light brown; under part of tail black at the base, then white, while the grey tips of the other feathers are seen beyond.

I find marked on the label of my specimen tarsi and feet flesh-colour; irides yellow; bill, bluish black, blue at base.

My figure is a female from a specimen sent me by Mr. Tristram, marked "Benyan, Dec. 1st., 1856." The egg is also from a specimen sent me by the same gentleman, marked "V. R., 1857."

It has also been figured by Temminck, in his celebrated work upon Pigeons, pl. 45.

Columba gelastis, Temminck.—This is only considered a variety of the Common Turtle Dove—a larger bird with a redder-coloured abdomen. It has occurred in the south of Sweden; and Mr. Sclater tells us, "Ibis," July, 1861, that we may expect some day to see it in England. Without, therefore, in the absence of specimens, giving a figure, I will record here all we know about the bird.

The following is Nilsson's account, copied, translated, and kindly sent me by Mr. Wheelwright:—"The old bird about thirteen to fourteen inches long; wing from carpal joint eight inches. On the sides of the neck a

black spot with four white transverse streaks. Wings above blackish, with broad rusty red edges to the feathers, which give these parts a scaly appearance. Tail rounded, black, with a broad whitish grey tip, the web of the outer feathers grey; the middle nearly free from the light tips. Back and upper parts blue; head and breast whitish grey, with a rusty tinge, especially in the breast; under tail coverts bluish white.—Stockholm Museum.

Young. Tail black, with a broad white tip, which is absent on the middle feathers; wings, etc., dark brown, with rusty yellow tips. Black spots on the sides of the neck scarcely visible.—Stockholm Museum.

This Dove, which was formerly only known in Japan, has of late years been met with in Sweden. In December, 1842, a young example was purchased in Stockholm in a load of other birds from Herjeâdalei, where it was caught in the autumn. An older specimen was sent down alive by a ship-builder, named J. Peterson, of Piteo, to the Stockholm Museum. It was caught in a forest tract a mile and a half Swedish from the town. It was kept alive in Stockholm some time, but died December 20th., 1853, and is now preserved in the Museum as one of the rarest and most handsome of Swedish birds. According to Professor Sundevall, the note exactly resembles that of the Turtle Dove, (consequently not laughing, as the name would imply,) and the general appearance of the two birds is so similar, that were it not for the size it might easily be taken for a large variety of *C. Turtur*. Professor Sundevall imagines that besides Japan it inhabits North-Eastern Asia, and that the yearling bird, which was caught in Herjeâdalei, was hatched in the above-named province or in Lapland.

In its native country it appears to inhabit rocky mountainous tracts."

Dr. Leopold Von Schrenck, in his "Reisen und Forschungen im Amur Lande," Vol. 1, Part 2, 1854-6, page 390, has a long account of this bird, from which I extract the following:—"This is only a geographical variety of *C. Turtur*, distinguished by its greater size and by its darker colouring. The Amur Lande species resembles mark for mark the *C. Turtur*, and in the tone of its colouring most resembles the description given in the "Fauna Japonica," especially the wings, tail feathers, and upper parts; the under parts are brighter than in *C. Turtur*, and the lower breast is of a clear vinous reddish, without the yellowish tint; round the neck and upper part of the breast there is less brownish, and more vinous reddish grey colouring. The under tail coverts and the tips of the tail feathers are in all our specimens grey, and certainly in spring of a somewhat darker bluish ash grey; in the latter part of summer, on the contrary, they are shaded into a greyish white.

"We also find in the young of *C. gelastis* the characteristic markings of *C. Turtur*, namely, white on the tail and under tail coverts passing into grey, and on the belly into vinous red. Besides this *C. gelastis* has all the distinctive marks of the young Turtle Dove, especially on the throat and crop down to the breast, where the colour is grey brown, with rusty yellow edges to the feathers, without the glossy appearance; also on the primaries and secondaries towards the end the edges are broad rust brown, and the upper tail coverts, as well as the two middle tail feathers, have a slight rust brownish tip to each feather, passing into bluish grey borders in the middle of the feathers.

"In the next plumage the young birds have the iris two colours, in a sharply-defined ring; the inner part brown, and the outer yellowish. Beak bluish grey; feet violet grey. In the old birds in summer I have found the iris had its outer border in a slender whitish ring, and the inner part red; beak violet grey, especially towards the base; feet violet red."

Dr. Schrenck then discusses the opinions of other writers upon the specific difference of this bird. Temminck and Schlegel refer to the larger size of *Gelastis*, and the former to the shorter *tail* and *longer* wing. Middendorff also notices the larger size of the body, while Pallas is of opinion that the same difference as exists between the two in size, may equally be observed between the Russio-European and the Dauritian examples of *C. œnas* and *C. livia*.

The following is Dr. Schrenck's table of dimensions of the Amur bird:—Male.—Length of closed wings seven inches three lines, tail five inches, beak seven lines and a half, tarsi eleven lines and a half, middle toe (without claw) one inch, claw of middle toe three lines and a half. Female.—Length of closed wings six inches eleven lines, tail four inches ten lines, beak seven lines and a half, tarsi eleven lines and a half, middle toe (without claw) one inch, claw of middle toe three lines. Young.—Length of closed wings seven inches, tail four inches eleven lines, tarsi one inch, middle toe (without claw) one inch one line and a half, claw of middle toe three lines and a half.

On the whole, I think we may give *C. gelastis* to Mr. Darwin as a transitional variety. I will not, however, apologize for making a further extract from Dr. Schrenck's interesting notice.

Dr. Schrenck goes on to remark that the Turtle

Dove has spread along the shores of the Pacific Ocean to Dauria, and in larger numbers eastward to the Stanowvi Mountains and to the coasts of the Ochotsk Sea, (according to Middendorff,) to the neighbouring country of the Amoor, and (according to Temminck) to Japan, where it assumes its largest form, and has the same variety of colours which have been described in *C. gelastis*. "In the Amoor I found *C. gelastis* very common, as well at the mouths of the rivers as also further outwards, and on the Ussuri. It is also found, according to the testimony of the natives, on the Island of Sachalin. On the Amoor it remains in the hazel woods, as well as among evergreens and willow bushes on the islands, and, as far as I have been able to observe, in the neighbourhood of water. I have often seen them a short distance from the river, on the level sand and pebbles, between light willow branches, sitting in pairs, or in small companies of four to six. At first I thought they repaired to such places only to drink or pick up small stones and coarse grains of sand, but the specimens which I shot shew me that they find their food there as well. I found the crop filled with *Phrygane*, which is found abundantly, and of various kinds on the Amoor. I am not aware that this has ever been observed as the food of our Turtle Doves in Europe.

"Quite early in the spring this Turtle Dove appears on the Amoor. At the Nikolajev Posten I found them in the spring of 1855, the end of April; and it also appeared at the mouth of the river about the 8th. (20th.) of May, when the bushes were covered with ice, and there was still much snow in the forest.

"The moulting begins among the old birds in the

latter half of August, much later among the young ones, probably not until the old ones have completed their change.

"This Dove plays an important part in the religious ceremonies of the inhabitants of the Amoor, as does also the Cuckoo."

Further details of this interesting part of his subject Dr. Schrenck reserves for another part of the great work which is now throwing so much light upon the history of this interesting country.

Order X.—GALLINÆ.

Family TETRAONIDÆ. (Bonaparte.)

Genus Tetrao. *(Linnæus.)*

Generic Characters.—Beak short, strong, naked at the base; superior mandible arched, convex, and curved from its origin. Nares basal, half covered by an arched membrane, hidden by the forward feathers of the forehead; eyebrows naked, garnished by red papillæ. Feet with three toes in front, united as far as the first articulation; one toe behind, short: the edges of all pectinated. Tarsi feathered to the toes, and often even to the claws. Tail composed of sixteen or eighteen feathers. Wings short; the first primary short, the second shorter than the third, fourth, and fifth, which are the longest.

HAZEL GROUSE.

Tetrao bonasia.

Tetrao bonasia,	Linnæus, 1766.
Gallina corylorum,	Aldrovandus, 1599.
Bonasia,	Brisson, 1760.
Bonasia sylvestris,	Bonaparte, 1838.
Tetrastes bonasia,	Keyserling et Blasius, 1840.
Gelinotte commune,	Of the French.
Gemeines Haselhuhn,	Of the Germans.
Francolino di Monte,	Savi.
Hjerpe,	Of the Swedes.

Specific Characters.—Feathers of vertex elongated; tail round, with a black fascia tipped with grey on all the lateral feathers; inferior parts of the tarsi and the toes naked; throat black in the male, yellow in female. Length thirteen inches and a half; from carpal joint to tip of wing six inches and a half; tail six inches; tarsi one inch; beak nine lines.

According to modern views of classification we have now arrived at the second great division of the class *Aves*. The first division comprises all those birds, the young of which require attention in the nest from their parents, before they arrive at maturity in wing and limb. Hence they are called *Heterophagi*—those the young of which cannot feed themselves. We have gone through this sub-class, and have arrived at the second, or *Autophagi*—those the young of which can more or less feed themselves from birth. The former sub-class comprises the *Raptores*, *Passeres*, *Scansores*, and *Columbidæ;* the latter the *Rasores*, *Cursores*, *Grallatores*, and *Natatores*.

Although this work treats of only a section of the birds in one quarter of the globe, and though I have adopted as the simplest, and what I consider (with all its faults) the best of modern classifications—that of Temminck—I still do not consider myself precluded from noticing, from time to time, what I may think as worthy of observation on the great and important subject of scientific arrangement.

The division to which I have alluded makes but little break in Temminck's arrangement. It merely excludes the *Columbidæ* from the second sub-class, and places them in the first. The arrangement is, I think, a good one. It is founded on a great natural division in the plan of development in birds, and which is

beautifully adapted to the "circumstances of their existence."

The Hazel Grouse, which, in the absence from my list of the genus *Phasianus*, claims my first notice, is an inhabitant of many of the heathery or woody mountains and plains of Europe. It occurs in the north of Sweden and Norway, Switzerland, Germany, France, Italy, the Alps, Savoy, Verona, the Tyrol and Siberia as far as the River Lena. In France it is especially found among the Pyrenees, the mountains of the Vosges, the Dauphiné, and the Ardennes. It does not occur in Greece or Holland, and is not noticed in Dr. Machado's list of the birds of Andalusia. Dr. Schrenck includes it in the birds of Amoor Land.

Mr. Wheelwright, of Gadsjo, in Sweden, living in the land of Grouse, has obligingly favoured me with some notes about this and the next species, for which I have to tender him my thanks; such information, coming from the fountain head, always being most acceptable.

"The Hjerpe has never been met with in the south of Sweden, but is found in the woods of Dahl and in the south-west coast of Bohns Land. It is tolerably common in Öster Gothland. It is rare around Stockholm, but common in the more northerly parts; (Nilsson remarks that this appears the more strange since the same bird comes in numbers into Germany, and even France. He thinks that if it were introduced it would thrive in the rocky wooded tracts of North Scania.)

"The Hazel Grouse does not go so high up the fell sides as the Capercaillie or Black Grouse, and it disappears from the Norwegian fells long before we have reached the limits of the frost. According to

Herr Von Wright, it is found up as high as Kengis, (67° 10′,) and even as high as Mounioniska. It is common in most parts of Wermerland."

"It frequents old thick forests, as well as young plantations of birch and pine mixed, and I think this is much owing to the season of the year. With us it is generally found in old fir forests with stony rises, and often at the foot of rocks in the aln and birch woods. In summer they appear to frequent leafy plantations, and with the fall of the leaf they withdraw into the fir forests, where they remain through the winter, only making occasional migrations into the nearest birch woods to feed on the catkins of the birch, which at this season forms their principal, and, I think, their only nourishment, for I never by any chance find any fir shoots in their crops, as I do in those of the Capercaillie. They appear always to be on the ground, and only fly up into a fir tree when they are flushed. Their flight is noisy and bustling, and they never go far. I never find them by any chance in the open, like the Black Grouse."

"They live in a state of monogamy, and with us the pairing takes place about the same time as that of the Capercaillie or Black Grouse. The note is a soft rather melancholy pipe, which can be readily imitated by a Hjerpe whistle made of bone or quill. The call-note rather resembles 'li, li, tititiri-ti.' The note of the male is stronger than that of the female. By this note, which we always hear from the ground, the sexes carry on their spring conversation, and in the autumn the mother uses the same kind of language to her young. As soon as the pairing is over the sexes divide. The males keep then single, and you never see three or four together. The female lays as many

as from nine to twelve pale yellow brown-spotted eggs, in a hole in the moss on the ground. She makes no nest. She hatches the eggs by herself, and has all the care of the young. As soon as the young can fly the male comes back to them, and the whole family live together during the autumn and winter. They remain throughout the year in those woods in which they take up their abode. I never saw more than one family together in our forests, though in Finland they are said to pack. In the beginning of April they separate in pairs, and the breeding season begins, although I never took a nest in Wermerland till the middle of May.

"In the north they are considered the most delicate of forest game, but they afford little sport to the real sportsman, as we generally shoot them from the perch. I think they are more shy and retired in their habits than any other of the Grouse."

"The beak is black, thick, and convex; upper mandible the longest. First primary shorter than the eighth, second shorter than the sixth; third, fourth, and fifth alike, and longest. Tail somewhat rounded. The crown feathers, which, in the male especially, are long, can be raised into a kind of crest. Over the eye is a small naked red spot, with small warts on the upper edge, but no comb. Tarsi generally only half, but sometimes three fourths covered with grey, soft, hairy feathers; the naked part grey brown, covered with divided half rings. Toes grey brown, covered with half rings, and on the sides with scales, under which they are fringed with combed teeth; claws pale brown."

"It varies much in size. From the northern tracts the male is generally from fourteen inches to fourteen

inches and a half long; extent of wings twenty inches; tail four inches and six eighths, extending beyond the wings three inches and a half; tarsus one inch and a half." The above is Swedish measure, in which the inch is a quarter of an eighth shorter, and, I have no doubt, refers to freshly-killed specimens. The dimensions in my diagnosis are those of a fine male sent me by Mr. Wheelwright, which is figured.

"Head above, neck, and part of the back brown or grey brown, with black transverse streaks; shoulders rusty brown, with black spots, and in the outer edge a long white streak. Wing coverts grey brown, with white spots; back and rump ash grey, marked with longitudinal black streaks and small black points; chin and throat pure black, with a white edging. Behind the nostrils a white spot, and a small one behind the eye. Front of neck rusty brown, with a black streak before the white edge of each feather. This black streak and the white edge is broader on the breast and belly, on which account it appears white with black or brown red transverse spots. On the sides the red brown colour is more apparent. Wing primaries dark brown, speckled on the outer web with rusty yellow and brown. Secondaries same, with rusty yellow edges on the tips. Tail feathers black, speckled with ash grey, and a pure black band before the tip, which is pale ash grey, often speckled with black. The two middle feathers speckled with brown and black, and marked with seven or eight confused black and ash grey transverse bands. Iris, in a freshly-killed specimen, brownish."

"Summer dress. The feathers on the head and neck are much shorter than in winter; chin and throat are rather brown than black."

"The female is from an inch to an inch and a half shorter than the male, and has a rusty yellow (not black) throat. Between the beak and the eye a red brown (not white) spot. Otherwise resembles the male.

"Accidental varieties occur with paler colour, so that they are only brownish where the usual colour is black. According to Nilsson this is the *Tetrao canus*, the original of which is preserved in the Stockholm Museum."

I have thought right to give Mr. Wheelwright's account in full. With the bird before me I have been able to verify the correctness of the description. Mr. W. himself, if at all on any point in doubt, referred to Nilsson's excellent history of these birds in the "Fauna Skania." To use his own words,—"I have referred in part to Nilsson, and verified his remarks by my own experience."

From the north-west of Europe it is interesting to follow this bird into the far-off north-east of Asia, where it was found in great plenty by Dr. L. Von Schrenck. The account is so interesting as it regards the geographical distribution of this species, that I will add a translation of Dr. Schrenck's notice, from his recent "Reisen und Forschungen in Amur Land."

"The Hazel Grouse of the Amoor Land entirely agrees with that of Siberia and the west of Europe, except in having a greater proportion of ashy grey, and underneath the feathers more rusty brown; the whole length of the back is of a clear ashy grey, with fine dark bands and pointed marks across; the shoulders are partly rusty brown, and there is also a little upon the upper and under wing coverts; also round the crop there is a rusty brown among the black and white streaks. At the side of the breast there is

a lively rust-colour, which, however, is very scanty, and rapidly passes into a lighter shade.

"The Hazel Grouse is found in the whole of Amoor Land as far as I know it, from the southern coast of the Ochotsk Sea to the Bay of Hadshi, and on the island Sachalin, as well as at the mouth of the Amoor, to the sources of the river in Dauria. Everywhere, and at all seasons of the year, it is the most common of the feathered tribe. Scarcely any locality can be named where it is not found, yet it appears principally in the north of the Amoor, on the borders of rivers in the mixed forests of birch, aspen, poplar, alder, and willow bushes, and in the south principally in the light-foliaged woods and the underwood which grows along the rocky banks of the rivers. Not unfrequently, also, I have met with it in winter and summer on the willow-grown islands, or on such shores as those of the Amoor, Gorin, and Ussuri. In as great numbers did I find the Hazel Grouse in the wildest parts of the Amoor Land, where it was by no means shy. In the Nikolajev Posten, and on the River Tyrny, in Sachalin, I have been able to shoot several times at a pair of individuals in a tree before the others flew away. In Sachalin, and on the Gorin, they flew up before us and kept in a circuit round about us. In summer, when the noise of our movements roused them, they often settled down on a tree close by the river, enabling us to shoot them from our hiding-places. They were among the daily contents of our game-bag in the Amoor Land, where, as well as in the Bay of Hadschi and the snow-fields of Sachalin, they gave us as good sport as in the light and sunny oak hedges on the Ussuri.

"In the summer of 1855 I found a nest with eggs

on the borders of the Lake of Kidsi. It was in a fir wood, at the foot of a tree, concealed in the moss and brushwood. The eggs were of the usual dark yellow, with many brown spots and points, and were hatched on the 14th. of June. On the 28th. of July I met with a family just fledged at Pachale, near the mouth of the Gorin, in the leafy underwood of a pine forest. The moulting of the Hazel Grouse takes place at Nikolajev Posten in August and September. On the 23rd. of August I found the moulting far advanced, and every wing and tail feather freshly grown. It was quite concluded on the 1st. of October."

My figures of this bird and its egg are from specimens sent me from Sweden by Mr. Wheelwright.

The bird has also been figured by Aldrovandus, Ornith., pl. 82; Stor, Degli Uccelli, pl. 238, (male;) Buffon, pl enl., 474-479; Roux, Ornith. Prov., pl. 254; Bouteil, Ornith. du Dauph, pl. 41; Naumann, Vogel Deutsch., pl. 158; Gould, B. of E., pl. 250.

GALLINÆ.

Family TETRAONIDÆ. (Bonaparte.)

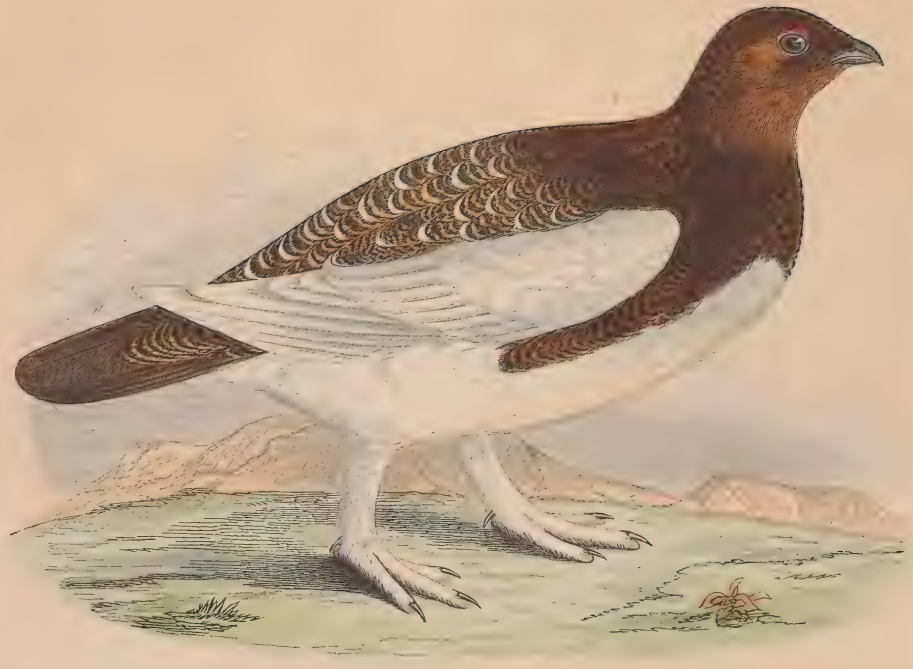
Genus TETRAO. *(Linnæus.)*

WILLOW GROUSE.

Tetrao salicti.

Tetrao saliceti,	TEMMINCK.
" *lagopus,*	LINNÆUS.
" *albus,*	GMELIN.
" *subalpina,*	NILSSON.
Lagopus albus,	BONAPARTE.
" *saliceti,*	SWAINSON.
Lagopède des saules,	OF THE FRENCH.
Morast-Schneehuhn,	OF THE GERMANS.
Dal Ripa,	SWEDISH.
Dalrypa skogsrypa,	NORSK.
Mezakana,	FINNISH.
Riefsak,	LAPP.

Specific Characters.—The primaries, abdomen, and feet white in the adult in all seasons. Tail square, of fourteen feathers, and always black. First primary one inch and three eighths shorter than the second, which is two eighths of an inch shorter than the third, which is equal to the fourth, and longest, the fifth always longer than the second. Length of male fifteen inches and a half; expanse of wing twenty-four to twenty-five inches; from carpus to tip eight inches; tail five inches, extending beyond the closed wings about three inches; beak, from forehead, seven eighths of an inch,—from nasal furrow half an inch;



breadth of that part of beak three eighths of an inch; tarsi one inch and a half; middle toe one inch and a half; hind toe half an inch. The female varies from half an inch to an inch shorter than the male.

The Willow Grouse is an inhabitant of the north of both Europe and America. Its home is, however, more especially in Sweden and Norway, Lapland and Greenland.

In Sweden and Norway it occupies much the same position as the Red Grouse does in our own country. A question was raised in the "Zoologist," in 1858, as to the specific identity of the two birds, by Mr. Norman, of Hull, and an interesting discussion ensued, which, however, appeared to go against such a supposition. In the present day it is more difficult than ever to define the character of species. Grant says that "species mongers" have been destroyed for ever by the all-powerful wand of Mr. Darwin. I for one, however, refuse to submit to a dogma of this kind, and will take the liberty of considering the *Tetrao saliceti* as a species perfectly distinct from that of *T. Scoticus*. Its affinities are more with the Ptarmigan than with the Red Grouse, but it is distinct from both.

Much as I was indebted to Mr. Wheelwright for his notes about the Hazel Grouse, I am still more obliged to him for the very valuable account with which he has favoured me of the present bird. Living as he does in their own country, Mr. W.'s experience is valuable, and his well-known contributions to natural history entitle his remarks to our respect. Like the last contribution the present one is filled up where deficient from Nilsson.

"The Willow Grouse is found in the north of

Scandinavia, from the very north of Finmark down to about 60° north latitude; it is met with in North Wermerland throughout the whole year, but never further south than Lake Fryken, unless indeed they are driven down by snow, when an odd one may even occasionally be shot in Bohns Land and Upland. They are not met with near Christiana in the summer.

They never go up to the real fells or such rocks as rise above the limits of vegetation. When we go down from the fell tops we find the Dal Ripa first in that region which is clothed with willow bushes and fell birch, *(Betula nana,)* and especially in the lower tracts, where the birch *(Betula alba,)* first appears and forms low forests. Below this we rarely meet with them, and only when the young can fly.

In this above-mentioned sub-alpine region the Dal Ripa in summer is usually found in valleys, mostly by the side of the little becks or mountain streams which run among the bushes and thickets. You always find them in pairs or families with the male and female together. You not only find them, according to Nilsson, in the interior of the country, but even on the coasts and islands. They crouch among the dwarf birch, willow, or heather, and rarely rise till you nearly tread on them. Sometimes, however, they rise very wild, and in the spring and autumn appear to be most shy. They almost always are on the ground, and very rarely perch in a tree; but, although I have myself seen on more than one occasion the Willow Grouse, when frightened, perch in the birch trees, it is so rare an occurrence that many deny it. Their flight to me appears exactly to resemble that of the Red Grouse, and as they fly they utter a loud cackle

which much resembles 'crrackackackkah.' They do not generally fly far, and when they settle they usually utter the note of 'kawau, kawau.' The female generally rises silently, or with a faint 'hjan, hjan.' As soon as the young birds are hatched you see the families together; and in the breeding season the male is never far from the nest where the old female is sitting. As winter comes on they pack, and deep snow and hard frost sometimes drives them down into the regions that lie below the fells.

They pair about the end of May, but sometimes as early as April. At about one in the morning the male commences his love song with a loud 'prrr-pack-prrr,' and a deeper 'kawau, kawau.' The female answers with a finer 'hjan, hjan,' and the two draw together, and the male is very easily shot now by the poacher, who is hidden behind a rock or bush, and decoys him within shot by an imitation of the call-note of the female. The bird comes on by short flights, and runs within shot, sometimes stands still, raises up his tail spread out like a fan, flaps his wings against his legs, throws his neck back, and answers with his hoarse 'kawau, kawau.'

The female lays ten or twelve eggs, without any nest, in the heather, but generally under a bush, or by the stump of an old fir. The male keeps watch while she is sitting to drive away any birds of prey that may approach the spot, and so bold is he at this time that he has even been seen to drive away a fox. After they are hatched, both the old ones attend the covey. When the young ones are frightened up they scream out much like young chickens, and separating cast themselves among the bushes or heather, and then sit so close that they can be easily picked up by the hand.

In the summer the food of the Dal Ripa consists principally of the blades or leaves of several plants, such as *Salix herbacea*—the bleaberry, *(Vaccinum myrtillus,)* and the young leaves or sprouts of several other species of willow, and especially the seed of the *Polygonum viviparum,* which on this account is in Norway called Ripa Grass. In autumn they principally live on berries, and in the winter on birch knots, and the stalks of the bleaberry bushes. In spring their chief food consists of birch knots.

Although no doubt Willow Grouse would afford as good sport to the shooter as the Red Grouse, scarcely any one ever shoots them here in a fair manner, and they are principally taken in snares in the winter, and sent down frozen to the different towns for sale; and some idea of this traffic may be formed by the fact that a single dealer in one of the northern provinces, according to Nilsson, during one winter when the birds were plentiful, sent off about fifty thousand Dal Ripa.

Beak black, short, thick, and convex; upper mandible tolerably blunt, and a little longer than the lower, (but out of a great many which I have examined scarcely two are alike.) Iris dark brown; eyelids covered with down, the edges brown. Over the eye in the male a large half-round vermilion spot covered with small warts, and fringed upwards with a red comb, three or four millemetres high, dentated at the edges. This spot and comb is smaller and paler in the female, and in both sexes is most apparent in the breeding season. The claws vary in form and colour at different seasons; in winter they are long, of an even breadth, tolerably straight, thin, convex above, concave beneath, white, and only brown at the roots. In summer they

are shorter, oblong, oval, and flat (not concave) underneath. They are shed in July or August.

The old male in summer dress.—Head, neck, breast, and sides, red brown, sometimes chesnut, with black spots, especially on the top of the head and back of the neck, sometimes even with black transverse streaks or wavy lines on the breast; under chin for the most part black, with a white spot on each side. The eyelid white, and sometimes a white spot over the nostrils. Back, shoulders, over rump, upper tail coverts, and the innermost wing feathers, as well as the middle coverts, black, transversely speckled with rusty yellow or red brown lines. The smaller wing coverts, most of the wing feathers, belly, thighs, and legs, white; the six first primaries with brown shafts. Tail feathers —the fourteen black, with white edges on the tips, which are broadest on the middle ones; the two feathers which lie over them and their coverts speckled with black and red brown. The under tail coverts red brown, speckled with black, and marked with a streak in front of the white edge at the end; tarsi in front and toes on the inner half covered with dirty white hair-like feathers; tarsi behind and the front part of the toes naked.

Female in summer.—Head, neck, breast, and sides, rusty yellow, with black spots or transverse streaks; these are especially thick on the upper parts, so that the head above and sometimes the back of neck appears black, with rusty yellow spots. Back, shoulders, upper tail coverts, and the two or four middle tail feathers, black, and speckled with rusty yellow or pale yellow transverse streaks; belly, wings, tail, and legs as in the male; under tail coverts pure white.

The male in summer dress differs from the female on account of its rather larger body and black chin, which in the female is rusty yellow; red brown colour on the neck and breast, where the female has only rusty yellow and black, and by the altogether different under tail coverts. Sometimes the red brown in the male is so dark as to appear nearly chesnut, or black brown in very old males, but in the younger birds the colour is lighter yellowish red brown, like the female, so that the head and neck above are black, with small red brown spots. Throat, sides of the head, front of the neck, and breast, yellowish brown, with small black transverse streaks; but the female is always distinguished from the male through many or few red brown feathers on the throat and breast. It is according to Nilsson's experience that the males are more seldom met with in pure summer dress than the females. Both moult in July and August, when the speckled feathers are shed and others come in their places; and Liljeborg notices that this species even has an autumn dress with finer rusty yellow watering.

The young, just before the autumnal moult, from specimens taken from the 9th. to the 16th. of July, about six or seven inches long; beak brown; claws grey; the naked pale red spot over the eyes has already obtained its little dentated comb; legs covered with dirty grey brown hair-like feathers down to the very claws. Head above brown red, with a black spot on the crown, and a brown streak along the back of the neck. The upper parts of the body speckled with red brown and black, with white spots on the shoulders; breast and sides rusty yellow, with black transverse bands. Wing feathers grey brown, the outer finely—the inner ones more thickly—speckled

with rusty yellow. Tail with black and rusty yellow wavy transverse streaks.

By degrees the young become like the mother, as the brown wing feathers in August are changed for white, and the black tail feathers shoot out. The white wing feathers grow in this manner:—The outer ones of the first and second order come at one time; the third and fourth brown wing feathers are shed last in the young birds, generally after the middle of August. In this or the foregoing month the old birds shed their tail and wing feathers, and in the same or beginning of the next month the horny covering on the claws.

Male and female in winter dress. Beak black; eye spot smaller and paler; the fourteen tail feathers black, with white edges on the ends, very broad on the middle ones. The shafts of the five or six first wing feathers brown. For the rest, the whole of the plumage is snow white; tarsi and toes thickly covered with bushy feathers, like hair, which, similar to the foot of a hare, lie even on the sole of the foot.

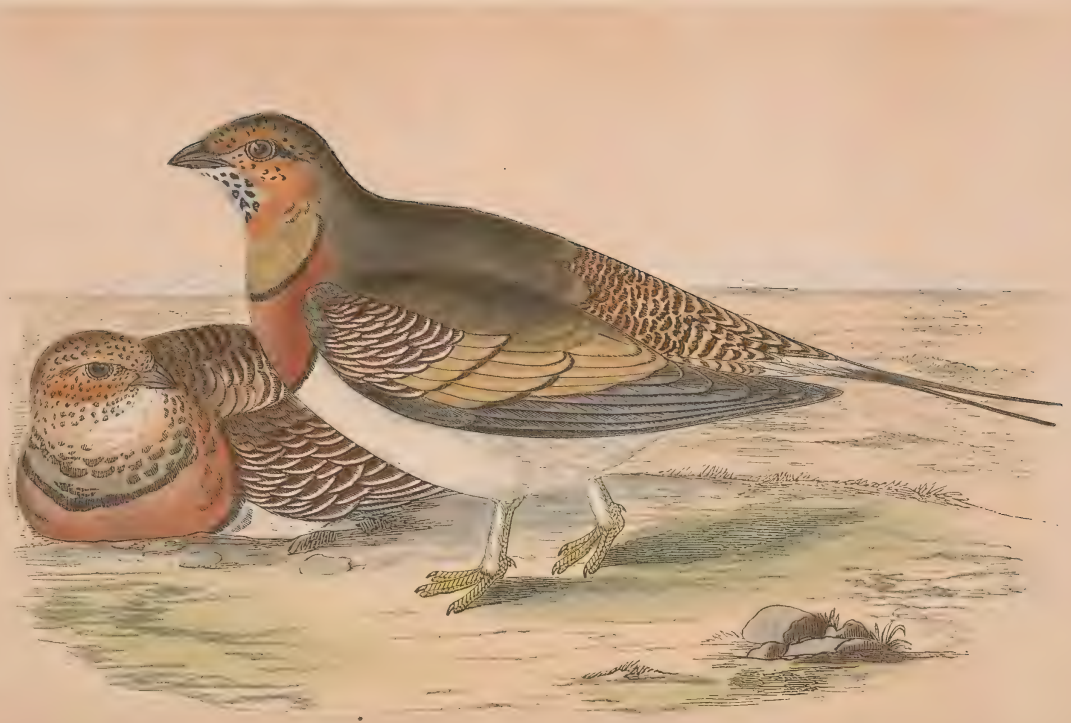
The transition from summer to winter dress takes place at different times in different places and seasons, but generally in September and October. In the middle of the last-named month we see some white Ripa, and some speckled, on account of some of the summer feathers remaining. In the end of April or May the spring moult takes place, and even in the beginning of June we find occasionally winter feathers remaining. During the period of transition we see speckled birds with more or less white feathers among the speckled ones.

The spring moult comes on in this way:—The coloured feathers first appear on the head and neck,

next on the back, last on the breast; and this tallies exactly with Hearne's observations in North America."

My figure of this bird is that of a female shot by Mr. Wheelwright from the nest in June, 1860. It is therefore in the real breeding plumage. The egg figured was taken out of her nest at the same time.

The bird has also been figured by Buffon, pl. enl. 129, (female in breeding plumage, f. 2 head of female taking on the breeding dress;) Boutcil, Ornith. du Dauph., pl. 42, f. 1; Naumann, Vogel. Deutsch., pl. 159; Temminck, Pig. et Gall., vol. iii, pl. 11, figs. 1, 2, 3; Frisch, pl. 110 et 111, (in winter plumage, and commencement of moult;) Gould, B. of E., pl. 255.



GALLINÆ.

Family TETRAONIDÆ. (Bonaparte.)

Genus Pterocles. *(Temminck.)*

Generic Characters.—Beak medium sized, compressed, slender in some species; upper mandible straight, but curved near the point; nostrils basal, half closed by a membrane, covered by the feathers of the forehead, open below. Feet with short toes, the under one hardly developed and articulated high up the tarsus; the three front toes united to the first articulation, and edged with a membrane; the front of the tarsi covered with small very short feathers, the rest naked. Claws very short, the hind one sharp edged, those in front obtuse. Tail conical; in some species the two middle feathers are elongated in a thread-like manner. Wings long, terminated in a point, the first primary the longest.

PIN-TAILED SAND GROUSE.

Pterocles alchata.

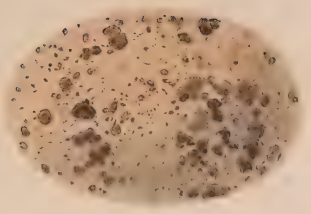
Pterocles alchata,	Stephens.
" *setarius,*	Temminck.
Tetrao alchata,	Linnæus.
" *caudacutus,*	Gmelin.
" *chata,*	Pallas.
Ænas cata,	Vieillot.
Ganga cata,	Of the French.
Chata-Flughuhn,	Of the Germans.
La Grandule,	Savi.

Specific Characters.—Tail conical, and the two middle feathers prolonged to a thin point. A broad rufous band bordered with black, darker in the male, separates the chesnut-coloured throat from the pure white abdomen. Length, from tip of beak to the end of the long, thin, tail feathers thirteen inches, the latter extending three inches beyond the shorter feathers of the tail. From carpus to the end of the long pointed wing eight inches and a half; beak eight lines; tarsi one inch and one fifth; middle toe and claw one inch.

This most elegant and beautiful of birds claims Spain and the Pyrenees as its principal European locality, for which reason it was named by Brisson La Gelinote des Pyrenees. It is also found in Sicily and the Levant, the plains of Crau in Provence, and accidentally in the northern parts of France. Its real home however is in the sandy plains of Africa and Asia, where it ranges from the three provinces of Algeria, through the Great Sahara, to Egypt, Syria, Persia, and thence to the burning sands of India, being common, as Dr. Leith Adams informs me, in Afghanistan.

In Eastern Africa we are informed by Mr. Salvin, (Ibis, vol. i, p. 352,) that he only found this bird in the extensive sandy plains,—the Harakta. In the north of Africa, however, Mr. Tristram (Ibis, vol. ii, p. 70,) says that it is far more abundant, and continues to occur in vast flocks in winter, in the M'zab and Touarick, where the next described species, *P. arenarius*, is not found.

The Pin-tail Sand Grouse occurs in sandy plains and uncultivated grounds, avoiding as much as possible the habitations of men. M. Crespon however tells us that he succeeded in taming it in confinement, and he had specimens in his aviary for several years, and



1. PIN-TAILED SAND GROUSE.

2. SAND GROUSE.

even bred them. The male appeared very attentive to its mate, whose voice it readily responded to in syllables resembling 'kaak, kaak, kaak, ka, ka, ka.'

In the desert however it is very wild. Mr. Tristram says, "except during the breeding-season it is very difficult of approach; and when packed in winter it is vain to attempt to get a second shot, unless well mounted. Its flight is stronger and more vigorous than its congeners; and its sharp-pointed long wings give it all the appearance of a Plover. It is very garrulous when on the ground, and often betrays itself by its call-note, long before it can be distinguished by the eye from the surrounding sand."

According to Eversmann its voice resembles that of Ravens and Crows. It makes no nest, but scrapes a hole in the sand, in which, according to Mr. Salvin, it deposits only three eggs, which are laid in May, and the young are hatched in about the second week of June. Degland says it lays four or five, Temminck two or three eggs. The egg is described by Mr. Tristram as perfectly elliptical in all the five species he possesses of the genus *Pterocles*. It is of a much richer fawn-colour than that of *P. arenarius*, "covered and sometimes zoned with large maroon-red blotches."

That which is figured—a specimen kindly sent to me by Mr. Tristram—is one inch and nine tenths long, and three inches and nine tenths round the middle. It was taken by his own hand.

Mr. Tristram says that the Pin-tail Sand Grouse is very bad eating, the flesh, like that of its congener, being both poor and dry. Mr. E. C. Taylor, however, does battle upon this point, (Ibis, vol. ii, p. 199,) where he says that it all depends upon the cook, and that in Egypt he found the two species of Sand Grouse,

P. exustus and *P. Senegalensis*, "very good eating, the flesh of the thigh especially being peculiarly white and tender. However our Dragoman was an artist of no ordinary culinary skill."

It is almost a pity, however, to talk about anything so sensuous as a dinner off a bird so beautiful as the Pin-tailed Sand Grouse. Mr. Tristram, whose experience as a practical ornithologist is very great, says, "I think, on close inspection, there is scarcely a bird in nature which surpasses the male *P. alchata* in richness of colouring or delicacy of pencilling"—a fact which I am sure my artist will verify with his usual skill.

The adult male has the head, nape, and back, a beautiful rich dead olive green, more or less shaded with darker, each feather being edged narrowly with black or blackish. The upper tail coverts rich fawn, finely barred and pencilled transversely with black. The greater wing coverts lighter olive green, with a more decidedly marked black border, while the lesser wing coverts are of a rich maroon, distinctly bordered with white. Primaries grey, with black glossy shafts; secondaries grey, bordered with white; tertiaries dark brown, with white inner webs, and also distinctly edged with white. Tail feathers grey, barred with dusky, and shaded with fawn-colour on the outer web, while the extremity of each feather for about half an inch is pure white; the long filiform middle tail feathers partaking of the olive green colours of the back, while below they share with this aspect of the tail feathers their rich dark brown. Side of the head and a band across the crop, upwards of an inch broad, rich dark fawn-colour, the latter being edged above and below by a line of black, which separates it above from the light olive greenish brown neck and

below from the pure white of the abdomen, flanks, and under tail coverts; shewing in a marked manner the sharply-defined colours in contrast, which gives to this bird a peculiarly beautiful appearance. The throat is black, sometimes as in my specimen, which is in autumn plumage, mottled with white. The tarsi are thickly clothed with short white feathers, which, like the colours of the other parts, are sharply contrasted where they terminate with the horny brown of the toes; beak horny brown; claws black.

The female differs from the male considerably. The head, nape, back, and upper tail coverts, are clearly barred with black and fawn-colour, broader on the back, and narrower but more thickly on the tail coverts. The throat is white, the collar round the neck lighter and more mottled with brown, while the band across the crop between the two black lines is much broader, and lighter in colour. The side of the head is mottled like the back of the head and neck. The white tips to the tail feathers are smaller, and the finely-extended middle tail feathers rather shorter. In other respects like the male.

The young of the year resemble the female, but are smaller. The crop shaded with greyish and russet, with spots and brown zigzags.

My figures of the male and female of this bird are from specimens kindly sent me by Mr. Tristram.

It has also been figured by Brisson, Ornithologia, vol. i, pl. 19, male and female; Buffon, pl. enl., 505 male, and 506 female; Roux, Ornith. Prov., pl. 247, adult male, pl. 248, fig. i, female adult, fig. ii, head of female of the year; pl. 249, fig. i, young just after leaving nest, and ii, male of year; Gould, pl. 258.

GALLINÆ.

Family TETRAONIDÆ. (Bonaparte.)

Genus Pterocles. *(Temminck.)*

SAND GROUSE.

Pterocles arenarius.

Pterocles arenarius,	Temminck.
Tetrao arenarius,	Pallas.
Perdix Aragonica,	Latham.
Ænas arenarius,	Vieillot.
Ganga unibande,	Of the French.
Ringel-flughuhn,	Of the Germans.
Ganga,	Savi.

Specific Characters.—Only one band across the thorax; abdomen black. Tail wedge-shaped, and without any elongation of the middle feathers. Length of male thirteen inches; carpus to tip nine inches; beak eight lines; tarsus one inch and a quarter.

The Sand Grouse inhabits the south of Europe, more especially Spain. It occurs also in Sicily, and occasionally in Italy and Germany; more rarely still in New Russia and the Caucasus. It is found only accidentally and as a straggler in Greece. Like the preceding species it is a bird of the desert, and is at home in the sandy plains of Northern Africa and Eastern Asia. In the Eastern Atlas Mr. Salvin tells us it occurs in the same localities as *P. alchata,* but

SAND GROUSE.

is also found about Djendeli and Madracen, where that bird is not found. Mr. Tristram says that though less abundant than *Alchata*, *P. arenarius* occurs universally throughout the Sahara, excepting in the extreme south, where it is replaced by *P. Senegalus*. Dr. Leith Adams informs me that it occurs plentifully in Persia, Afghanistan, and Northern India, where it is known to English sportsmen either as Sand Grouse or Rock Pigeon. He further adds, "It frequents dry arid wastes, and is usually met with in flocks; although in request as a game bird its flesh is tough, and devoid of good flavour. The call is a rough guttural sound, resembling 'tuturuk' repeated."

The following interesting account of the Sand Grouse is taken from Mr. Tristram's paper on the "Ornithology of Northern Africa," (Ibis, vol. ii, p. 69:)—"There is much of the Plover character in the flight and manner of this tribe; and the first time I observed a covey on the wing I took them for some large Plovers until within shot. The flocks of this species are generally smaller than those of its congener, though all the class appear to be more or less gregarious, even in the breeding season, several generally nesting close to each other. The *P. arenarius* is not so wary as *P. alchata*, perhaps from its upper plumage assimilating more closely to the sand in colour; but when alarmed it crouches to the ground, carefully concealing its dark breast, and does not take wing until approached very closely. Then it suddenly rises to a considerable height, and flies often to a great distance. These birds chiefly feed towards sunset, when their call-note, resembling that of a Partridge, may be heard incessantly until after dusk. As if to shew that in some respects they are a link between *Gallinæ* and *Columbidæ*, they never

lay more than three eggs, this being the invariable number of the genus. These are of a character most unlike that of any other gallinaceous bird with which I am acquainted, being extremely elongated, compressed in the centre, and exactly the same size at each end—in fact perfectly elliptical. The eggs are placed two in a line, and the third lengthways outside them in a depression in the sand without any nest. The bird in sitting, as I have observed, lies on one side spreading out one wing to cover the eggs, thus presenting a grotesque lop-sided appearance; but it is a posture for which the deep keel of her sternum admirably adapts her."

"The flesh of the Sand Grouse is extremely white, but very poor and dry, without any flavour. We never discovered any mode of cooking by which it could be rendered tasty, or even palatable. I have seen both the common species thrive while in captivity, and almost domesticated in the courtyards of Arabs' houses."

The egg which I have figured is one taken by Mr. Tristram, and kindly sent to me. It measures one inch and nine tenths long, and four inches and one tenth round the middle.

Captain Irby, in a valuable paper in the "Ibis," vol. iii, p. 235, on the "Birds observed in Oudh and Kumaon," says that two or three large flocks of *P. arenarius* were seen near Hurdue in January 1860, and many killed. He quite confirms the statements of Dr. Leith Adams and Mr. Tristram, about the uneatable character of the Sand Grouse. "Both species," says Captain Irby, of the Indian Sand Grouse which I have tasted are uneatable, and in this respect certainly tend to confirm what the natives say, 'that they live upon sand.'"

Without of course falling in with the native statement above made, it is quite clear from Mr. Taylor's note, as quoted in the last notice, that difference of food has much to do (as well as the skilful Dragoman) in making the flesh of these birds eatable.

The adult male has the top and sides of the head and nape russet grey. The back and upper tail coverts have a mottled appearance, representing a series of spots of a sandy ochreous colour surrounded by a ring of black. If a separate feather is examined, it will be found that the extremity is ochreous, and the base paler, the two colours being separated by a dusky band. The wing coverts are the same, but are terminated with rich ochreous, which gives a broad band of that colour across the wing. The long strong pointed wing, which when closed, extends beyond the tail, has the primaries dark grey with glossy black shafts, the third, fourth, fifth, and sixth slightly bordered at their distal ends with light russet. Secondaries unicolorous smoky grey, lightly bordered with white.

The throat and sides of the neck are occupied by a broad dark ochreous-coloured collar, faintly shewn at the nape, and bordered in front below with a broad black band; the neck and crop have a slight lavender tint, gradually going off into the mottled russet of the back; this is separated from the pink coloured feathers of the upper part of the abdomen by a narrow well-defined black band, edged with white, which goes right across the thorax; the middle and lower part of the abdomen and flanks are brown black with a tinge of sepia. Under tail coverts white; tail feathers, below and above, russet, bordered with black and tipped with white, except the two middle ones. Tarsi covered with smaller pink feathers in front, and with a kind

of shagreen skin behind, which is continuous with that on the soles of the feet. The beak bluish horn colour. Feet yellow.

The female differs from the male, in having the upper parts of a light fawn-colour, thickly pencilled with black in transverse striæ. Lighter and fewer bands on the wing coverts, which terminate with ochreous yellow, but much paler than in the male; throat and under wing coverts yellowish white, the breast in colour and markings like that of a hen Pheasant, and the black line, which is broader than in the male, is succeeded by a band of about half an inch wide of yellowish white. The rest of the abdomen black. Under tail coverts whiter.

My figures, male and female, are from specimens kindly sent to me by Mr. Tristram; they are marked Laghouat, November 1856, and therefore in winter plumage.

The bird has also been figured by Temminck and Laugier pl. col. 354 and 360; Gould, Birds of Europe, pl. 257; and Naumann pl. 153.

Of the beautiful and elegant Three-toed Sand Grouse, *Syrrhaptes paradoxus*, an excellent figure and description has been given in the "Ibis," vol. ii, p. 105, by Mr. Moore, the keeper of the Free, Public, and Derby Museum, Liverpool. This paper was read at the meeting of the British Association at Aberdeen, in 1859. It records the appearance of this bird for the first time in England, or even in Europe. One specimen was shot in Wales, out of a flock of three, on July 9th., 1859. Another was captured in Norfolk about the same time, and is recorded by Mr. Currie,

("Ibis," vol. i, p. 472.) A third specimen was shot near Hebro, in Jutland, on the 23rd. of July, 1859; and a pair were observed in the Dunes near Leyden, one of which was shot in September, 1859.

As there is a full account of the capture of this bird, and its history, with a plate by Wolf executed in the first-rate style of excellence, for which the "Ibis" is justly celebrated, I do not feel called upon to include it in this work. If any bird is seen in Europe for the first time, and not figured, it will still fall to my net, though observed in these isles. I regret not to have the opportunity of including in my work the beautiful *Syrrhaptes paradoxus*, so called from the entire absence of a spur or hind toe, and also remarkable for the aberrant character of the beak.

GALLINÆ.

Family PERDICIDÆ. (Bonaparte.)

Genus TETRAO-GALLUS. *(Gray.)*

Generic Characters.—Beak much shorter than the head, broad at its base; upper mandible arched near the point, compressed, the commissure waved or undulated. Nostrils pierced in a semicircle at the base of a swollen cere, and surrounded by the feathers of the forehead. Wings subacute, the second and third primaries being the longest; tail large and rounded. Tarsi short and stubby, equal in length to the third toe, broadly shielded with scales; toes united by a slight membrane; the hind toe is short, and does not touch the ground; claws middle sized.

CAUCASIAN SNOW PARTRIDGE.

Tetrao-gallus Caucasicus.

Tetrao-gallus Caucasicus,	GRAY. BONAPARTE. SCHLEGEL.
" *Caspia,*	GOULD.
Tetrao Caucasicus,	PALLAS; Zoog., ii, p. 76, No. 225.
Tetraogalle du Caucase,	OF THE FRENCH.
Kaukasisches Alpenhuhn,	OF THE GERMANS.

Specific Characters.—Upper plumage grey. The feathers of the upper wing coverts and middle of the back broadly bordered with ochreous brown on their outer web. The long feathers of the flanks edged on both webs with still darker ochreous brown. Front of the neck marked with the brown horse-shoe, like the Grey Partridge. Length twenty-one inches and a half; carpus to tip eleven inches; tarsus and middle toe and claw each two inches and a half; beak one inch and a half long, and circumference at base two inches.

CAUCASIAN SNOW PARTRIDGE.

For this species and four or five others known as "Snow Partridges" or "Snow Pheasants," Dr. Gray has established the Genus *Tetrao-gallus*, signifying that it is intermediate between the Grouse and Pheasant or Partridge. I think, however, that the subject of the present notice might have very well stood at the head of the genus *Perdix* leading us from *Phasianus* to the *Francolins*, and thence to the typical Partridges. As, however, it is the rule among ornithologists to group birds of similar structure and habits under a number of different genera, it is not for me to complain.

The Caucasian Snow Partridge inhabits that neutral ground, half of which is in Europe, and the other in Asia—the Caucasian Range. As its name implies, it is found there among the wild and desolate mountains which are covered with perpetual snow. It is therefore difficult of access, and we find very little recorded of its habits or nidification.

The Snow Partridge, living on neutral ground, must of course be classed among those birds more or less common to the continents—Europe and Asia.

Mr. Gould in his "Birds of Asia," mentions that he was informed by Prince Charles Bonaparte, that "there were reasons for believing that this bird occurs within the confines of Europe; he did not, however, mention the locality in which it has been observed."

But surely if the bird is found in the Caucasus, or as one of its names implies, on the borders of the Caspian, its European locality is sufficiently indicated. Mr. Gould further remarks "I had also been told by an officer of one of Her Majesty's surveying ships employed in the Mediterranean, whose name I cannot recollect, that he himself had observed a bird of this form among the mountains in the island of Candia,

where, however, it was very rare, and only to be seen on the peaks of the hills; as this is a point of some interest in the history of the birds of this genus, I would beg to direct the attention of travellers to the subject."

Mr. Gould also inserts an extract furnished him by Mr. G. R. Gray, taken from one of the St. Petersburg "Transactions," which is as follows:—

"This species builds on the highest summits of the rocky mountains of the Caucasus; it prefers altogether the regions of snow, which it never quits; thus when we desired to acclimatize the young chickens of this Partridge on the plains of Kahetia, they did but survive the spring.

It runs on the rocks of the ledges of precipices with great agility, and rises with a cry on the least danger, so that the most skilful sportsman cannot approach within shot, except under cover of mists.

They live in societies of from six to ten individuals, becoming the inseparable companions of the goat, on the excrement of which they feed during the winter months.

In autumn it grows very fat, and its flesh resembles that of the Common Partridge. In the crop of this gallinaceous bird I have found a great quantity of sand and of small stones, mixed with all kinds of seeds of alpine plants."

In the "Ibis," vol. i, p. 116, the Editor gives an extract from the journey of one Herr Kotschy into the Cilician Taurus in Asia Minor, in which this bird is incidentally mentioned as being found in company with the steinbock on the Taurus mountains. He calls it "a noble bird with a fine-sounding call." As this is more than half way from the Caucasus to Candia,

the statement adds strength to that of Mr. Gould.

The male has the top and sides of the head and nape what I have called Partridge grey. Scapularies and all the rest of the upper parts the same colour, finely dotted with light brown, and marked on the wing coverts with broad longitudinal markings of what I may also call Partridge brown, being similar to the well-known horse-shoe colour of our Grey Partridge. Primaries of pure white, with about an inch and a half of their distal extremities, dull brown; the secondaries having their general colour the same, but the brown parts larger, and the outer web the same dotted grey as the upper parts. Throat and sides of the neck white, the two parts being separated by a broad band of Partridge brown, forming a double horse-shoe of that colour. From this double horse-shoe to nearly the middle of the abdomen, is a broad band of three inches and a half, of colours apparently borrowed from the French Red-legged Partridge, but not so distinct, being dirty white with black transverse markings across the feathers; the rest of the abdomen grey brown. The long feathers of the flanks a lighter grey, broadly edged with the characteristic brown above described. Under tail coverts white; tail feathers rufous below, and the same colour above, but thickly spotted with small black dots. Beak horn colour; the strong thickly scaled tarsi and toes reddish brown; the claws strong and obtuse. In my specimen, which is a male, and obtained by Mr. Tristram, from Circassia, there is no vestige of a spur.

The bird has also been figured by Gould in his magnificent work, the Birds of Asia.

GALLINÆ.

Family PERDICIDÆ. (Bonaparte.)

Genus PERDIX. *(Brisson.)*

FIRST SECTION.—FRANCOLINS.

Generic Characters.—Beak short, compressed, strong, naked at the base; superior mandible arched, convex, and much curved near the point. Nostrils basal, lateral, half closed by a membrane, arched, and naked. Feet with three toes in front and one behind, those in front united by a membrane up to the first articulation. Tail composed of fourteen or eighteen feathers, short, wedge-shaped, and turned towards the ground. Wings short, the three first primaries the shortest, the fourth and fifth the longest, the fifth generally the longest.

FRANCOLIN.

Perdix Francolinus.

Perdix francolinus,	LATHAM. TEMMINCK. VIEILLOT.
" "	CUVIER. LESSON. SCHINZ.
" "	SCHLEGEL.
Francolinus,	BRISSON.
Tetrao francolinus,	LINNÆUS.
Francolinus vulgaris,	STEPHENS. BONAPARTE.
Chætopus francolinus,	SWAINSON.
Attagen francolinus,	KEYSERLING ET BLASIUS.
Francolin à collier roux,	OF THE FRENCH.
Gemeines Spornfeldhuhn,	OF THE GERMANS.
Francolino,	SAVI.

Specific Characters.—Upper tail coverts and tail beautifully marked with black and white, (male,) or with broader bands of grey and white, (female.) A red collar round the neck of the male, bordered on the back below with another band of black feathers and round white spots. Under tail coverts in both sexes dark red. Length of male thirteen inches; carpus to tip six inches; tarsus two inches; middle toe and claw one inch and three quarters; beak one inch and three tenths. Female eleven inches and a half long.

The Francolin inhabits the south of Europe, especially Sicily, Malta, Cyprus, Sardinia, Naples, the Grecian Archipelago, and Turkey. From thence it ranges through the whole of Asia, and the vast prairies and marshes of the north of Africa. With the exception, however, of Sicily and the Grecian Archipelago, the Francolin is becoming a rare bird in Europe. Savi tells us that in the sixteenth century they were common, as game birds, in Tuscany, and that special laws were enacted by the Tuscan princes for their preservation. Now, however, they are only recorded very rarely there; Savi himself has never met with a specimen, although he has known sportsmen who have killed them in their youth.

The Francolin lives, like other Partridges, in coveys, and remains constant to the locality where it is bred. It loves humid woods and marshy grounds, and, according to Savi and other writers, it perches on trees during the night. M. Malherbe, however, denies that the Francolin perches. He says it lives solitarily in Sicily, in moist plains near a brook, or in the middle of a bed of rushes; that they keep much on the ground, but will fly a good distance when hunted, and their capture requires skill and perseverance. The natural timidity of the bird makes it difficult to tame in confinement.

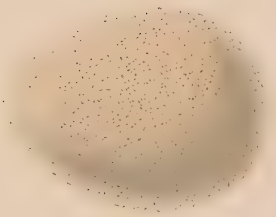
During the breeding season the male bird, morning and evening, utters a sonorous note, 'tre, tre, tre;' and there is an adage in Sicily, among the peasantry, that this cry indicates its value to be three taris, a sum equivalent to one franc and twenty-five centimes.

In India the Francolin or Black Partridge is very common. Captain Irby ("Ibis," vol. iii, p. 236,) says:—"This handsome Partridge is found in great numbers in all grass jungles near water, and is particularly numerous on the banks of the Gogra, Choka, and other large rivers. Good sport is to be had with them in November, in the *hulde* or turmeric fields. This Partridge was common in Kumaon in April, May, and June. Its call was to be heard wherever there was any cultivation." He further adds, when describing the Grey Partridge, *(Perdix ponticeriana,)* that its flesh is dry, and scarcely eatable, being a degree worse than that of the Black Partridge, (the Francolin.)

M. Malherbe, however, says that in Sicily it is "un gibier exquis," and that it is so much sought after at all seasons, that it is becoming more and more rare. Captain Irby says that in India the Francolin will take refuge in trees when flushed, but rarely.

The Francolin nests on the ground underneath some bush, where it scrapes a hollow, which it fills with dried leaves and stalks, and in this nest it deposits from ten to fourteen eggs, which are of a pale grey yellow or white, and either unicolorous or having large brownish, almost invisible spots marked upon them.

From a paper on the nidification of European birds, in "Naumannia," for 1853, p. 419, by Baldamus, I translate the following about the egg of the Francolin:—"Two eggs in my collection, and many others in the Paris collections, from Cyprus, differ materially from that



1. FRANCOLIN.

2. CREEK PARTRIDGE.

figured by Thienemann, pl. 7, fig. 8. This figure has the length, and almost the breadth of one figured as *Perdix saxatilis*. Figs. 5, *a*, *b*, which Thienemann figures of the Francolin's egg, is forty millemetres long, and twenty-nine millemetres broad, (*Saxatilis* being forty by thirty.) This in my opinion is too large. My specimens are much more nearly the size of those of *P. cinerea*. In the grain of the shell they also resemble the egg of *P. petrosa*. They have a somewhat granular surface and an isabelle white ground colour, and no spots."

The following are the measurements given by Baldamus of the five European Partridges, and the dimensions of their eggs:—*Perdix Græca*, (*Saxatilis.*)—Length of bird from thirty-two to thirty-five centimetres; egg, greater diameter from forty-three to forty-five millemetres, lesser from twenty-two to twenty-three millemetres. *P. petrosa*, (Barbary in B. lists.)—Bird thirty-one to thirty-two centimetres; egg, greater diameter thirty-nine to forty-one millemetres, lesser twenty-nine to thirty-one millemetres. *P. rubra*, (Red-leg.)—Bird, thirty to thirty-one centimetres; egg, greater diameter forty to forty-one millemetres, lesser thirty to thirty millemetres and a half. *P. cinerea*, (Grey Partridge.) —Bird, thirty centimetres; egg, greater diameter thirty-three to thirty-five millemetres, lesser twenty-five to twenty-six millemetres. *P. francolinus*.—Bird, thirty centimetres; egg, greater diameter thirty-three to thirty-four millemetres, lesser twenty-five to twenty-six millemetres.*

The figure of the egg of the Francolin in Bädeker's work is in accordance with this description of Balda-

* Ten millemetres are one centimetre, and to bring centimetres into English inches, multiply by two and divide by five.

mus, but, singularly enough, the description, which is by Brehm, falls into the error of describing what the plate does not exhibit, namely, that the egg is larger than that of the Red-leg or French Partridge. In the absence of an authentic specimen, I give a copy of Bädeker's figure of this egg.

The male has the top of the head and nape a light rufous, with longitudinal stripes of black; forehead and sides of the head, with the exception of a large oval patch of white extending from the eyes backwards, black. The dark rufous collar of the neck having some of its feathers tipped with an oval black spot with white edges, and a broader band of black feathers marked conspicuously with pure white round spots, occupy the upper part of the back; below these bands the scapularies are well marked out with dark brown feathers, broadly edged with light rufous; the rest of the back, upper tail coverts, and tail feathers, most delicately pencilled with transverse zigzag lines of black and white. The upper wing coverts are marked out like the scapularies, while the long tertials are richly marked with light rufous transverse bands, on a black brown ground, the rufous more distinct on the outer webs. The primaries and secondaries rich rufous, with transverse bands or spots of dusky brown, more or less distinct. The throat and breast are pitchy black, separated by the rich dark rufous collar round the neck; the sides of the chest and all the lower part of the abdomen black, with oval white spots, which become larger on the flanks and shaded with rufous; bottom of abdomen light red, edged with white, while the rich rufous of the neck is repeated on the feathers of the under tail coverts, which are also fringed with white. The feathers on the thighs are barred with

black and white, mingled with pencillings of rufous. Tail below dark brown, with their basal halves barred with white. Beak black; legs and feet orange red; tarsi armed with a spur.

The female is a much plainer-marked bird. The forehead, and a faint trace on the back of the neck, red; top of the head hair brown, with darker longitudinal shades; scapularies and wing coverts dark brown, with light brown edges; the rest of the back and upper tail coverts "partridge grey," beautifully marked and pencilled with darker transverse bands of brown and white. Primaries black brown, with russet spots and transverse bands; the secondaries marked in the same way, but the colours lighter, and the bands broader. The throat creamy white, going off into yellow on the neck; sides of the head rufous, finely spotted with black about the ear coverts; chest and abdomen cream white, with triangular bars of black, and more or less tinged with rufous on the sides and flanks; lower part of abdomen dirty white; under tail coverts dark rich russet, with slight bars of black and yellow, and covered on their basal aspect on each side by two or three feathers of a yellowish white, barred with black; tail feathers dark brown, lightly barred with wavy bands of white.

The young after the first moult resemble the adult. The males have the spur rudimentary.

My drawings of these birds, male and female, are from specimens procured by Mr. Tristram, in Cyprus.

The bird has also been figured by Brisson, pl. 27, fig. 2, in which it may be remarked that this accurate observer has omitted to give the spur on the tarsus of his figure, which is a male; Buffon, pl. enl. 147, (male and female;) Gould, pl. 259.

GALLINÆ.

Family PERDICIDÆ. (Bonaparte.)

Genus PERDIX. *(Brisson.)*

GREEK PARTRIDGE.

Perdix Græca.

Perdix Græca,	GESNER; Icones Avium, p. 64, 1553.
" "	BRISSON; 1760.
" *rufa,*	LINNÆUS. VIEILLOT.
" *saxatilis,*	MEYER ET WOLFF.
Bartavelle Grecque,	OF THE FRENCH.
Stein-rothehuhn, Rot-huhn, or Weltsch-Raeb-hun,	OF THE GERMANS.
Coturnice,	SAVI.
Aoker-Hoena,	OF THE SWEDES.

Specific Characters.—Throat and upper part of the front neck white or cream-coloured, which is separated from the unicolorous dove-coloured cross by a black band, broader at the sides, which extends from each eye. The central tail feathers extend for three quarters of an inch beyond the under tail coverts. Length thirteen inches and a half to fifteen inches; carpus to tip six inches and a half; tarsus two inches, middle toe and claw rather longer; beak three quarters of an inch.

THE bird which I have now to notice has been well known for three hundred years as *Perdix Græca,* or the Greek Partridge. It is closely allied to the

GREEK PARTRIDGE.

Red-leg, or French Partridge, but is at once distinguished by its larger size, and by the absence of the mottled plumage below the black mark in the neck. The older ornithologists—Gesner, Willughby, and Belloni—acknowledged this affinity by designating *Perdix Græca* as *Perdix major* or *Rufa major;* while Ray, Linnæus, and Albin all referred it to *Perdix rufa,* the latter even figuring the Red-legged Partridge for this bird. In the present day we do not find ornithologists confounding the two birds, as they are universally considered specifically distinct. There are, however, other varieties or races which are considered by modern naturalists as probably distinct also. Mr. Tristram has sent me two skins, one from the Morea, a male, which may be considered typical; and another, a female, a smaller bird with a rufous throat, which was obtained from Crete. But I cannot, after careful examination, find anything which age, or sex, or difference of food might not account for. Mr. Tristram says he thinks they represent two distinct species, one inhabiting the hills, the other the plains.

Dr. Leith Adams writes me word he is quite confident that the *Perdix chukar* (Gray) of India is identical with this bird. I will give an abstract of his letter:—"These two are identical. *P. chukar* frequents the Himalayas from Nepaul to the mountains of Persia in the west. I have seen and examined specimens from all these countries, including Afghanistan and Chinese Tartary. *P. Græca* is common on the hills and mountains of south-eastern Europe. It is a common bird during the winter months in the markets of Constantinople, where I procured several specimens, which I have carefully compared with Himalayan specimens of *P. chukar,* and I cannot observe any

difference. Mr. Blyth, (T. A. S., xviii, p. 53,) states that '*P. Græca* only differs from *P. chukar* of the Himalayas, Afghanistan, etc., in having a *purely white throat*, and in the ferruginous of the ear coverts being *less marked*.' According to my experience (having examined many skins) these points, although pretty general, are not universal in the birds killed in Turkey. I have seen several exactly similar in all respects with *P. chukar*."

According to this opinion the smaller of the two birds sent me by Mr. Tristram from Crete, is equal to the *P. chukar* of Gray; and it follows, I think, if this is so, that *P. Græca* and *P. chukar* are one and the same species, for surely we cannot maintain for a moment that the difference of colour in the throat is sufficient to constitute specific difference. Mr. Tristram, however, does not consider that his smaller specimen is sufficiently deep rufous, for he remarks,—"I never saw the white throat from India, or the rufous one from Western Europe. Turkey and Syria are debatable ground held by both varieties."

I have not been able to get a Swiss skin for comparison. As Mr. Tristram observes, however, the question is one of "race," or of eastern and western varieties of the same species. M. Bouteille, as quoted by M. Degland, has succeeded in obtaining a hybrid between *P. Græca* and *P. rubra*, the males being more like the former, the females more like the latter. Both had the black collar of the Greek Partridge and the black spots which follow it in the French Partridge, but smaller and less numerous. The feathers on the flanks of the male were more like those of *Græca*, in the female more like *rubra*.

The Greek Partridge is found, as its name implies,

in Greece and the islands of the Archipelago, in Italy, Sicily, Switzerland, and Turkey. Thence it spreads into Syria, being replaced in Persia and India by the form known as *P. chukar*. It is found in some parts of Germany and France, and among the mountains of the Jura, the Alps, and the Pyrenees. Specimens from Japan are, according to Temminck, exactly like those found in Europe. Lord Lilford, ("Ibis," vol. ii, p. 238,) says it is the Common Partridge of the Epirus and the Ionian Islands, but is not very abundant in Corfu, where it is only met with on the ridge of San Salvador. He further remarks:—"The Greek Partridge haunts the stony hill sides, never, as far as my own observation goes, descending to the plain. It is not easy to make a good bag of these birds, even in localities where they are numerous, as the coveys disperse on being disturbed, and on alighting each bird takes a line of its own, and sets off running to the nearest covert, which, in these parts, generally consists of thick evergreen shrubs, from which it is very difficult to flush them. In the Ionian Islands they are most abundant in Cephalonia, Santa Maura, Kalumo, Petula, Arkudi, and Meganisi. The flesh of this species is, to my taste, far superior to that of either of its congeners, *P. rubra* or *P. petrosa*."

The habit above mentioned by Lord Lilford, of frequenting stony and rocky places, is doubtless the reason why Meyer thought it right to alter the name of this bird, from that which it had possessed for centuries, to that of *Perdix saxatilis*, a most uncalled-for and unjustifiable innovation.

The Greek Partridge scrapes a hole near a rock or stone, which it fills with stalks and leaves, and in

this it lays from ten to twenty eggs, which are somewhat larger than those of *P. rubra*. The shell is hard and shining, and is either unspotted pale yellow, or brownish yellow with violet brown dots and spots, according to Bädeker. The shape of the egg is oval. Nidification commences in May, and the female sits twenty-three days.

The adult male has all the upper plumage dove-coloured grey, with a beautiful shade of purplish glossy pink on the scapularies and sides of the chest. The primaries are of a rich brown, with a light brown patch near the end of the quill on the third to the ninth inclusive, gradually getting smaller; the second, third, fourth, and fifth primaries are about equal, and the longest in the wing. Head, throat, and chest have been described in the specific diagnosis. Centre of the abdomen presents a conical surface of rich fawn-colour, flanked above on each side by beautifully-marked feathers of a pure dove-coloured grey, with a bar of light fawn-colour between two other transverse bars of rich umber brown, at the end of each feather: these latter markings being broader on the sides of the abdomen, and narrower on the flanks proper. Under tail coverts russet; tail feathers rich dark russet. The margin of the eyes, iris, and beak, a beautiful red; legs and feet same colour, but paler; bottom of the feet dirty yellow; the tarsus of the male is furnished with a well-developed, but obtuse spur, situated about the middle.

The female resembles the male, but is smaller and without spurs; the grey is less lively; there is less white on the throat; and the black band and the markings on the flanks are smaller.

The young after the first moult are more grey, and

less shaded with pink above, and are pencilled and spotted irregularly with brown and whitish.

In some varieties the white is less pure, or even fawn-coloured.

My figures of this bird and its egg are from specimens kindly sent me by Mr. Tristram. The male bird with white throat, the typical *P. Græca*, is from the Morea. The female bird with the rufous throat, which I have figured for comparison, is from Crete. It is the bird alluded to before.

The bird has also been figured by Brisson, Ornith., pl. 23, f. 1; Buffon, pl. enl. 231; Roux, Ornith. Prov., pl. 259; Naumann, pl. 164; Bouteil, Ornith. du Dauph., pl. 42, fig. 2; Gould, B. of E.; Temminck, Atlas du Manuel; Vieillot, Faun. Franc., pl. 109; Bonaparte, Fauna Ital.

END OF VOL. III.

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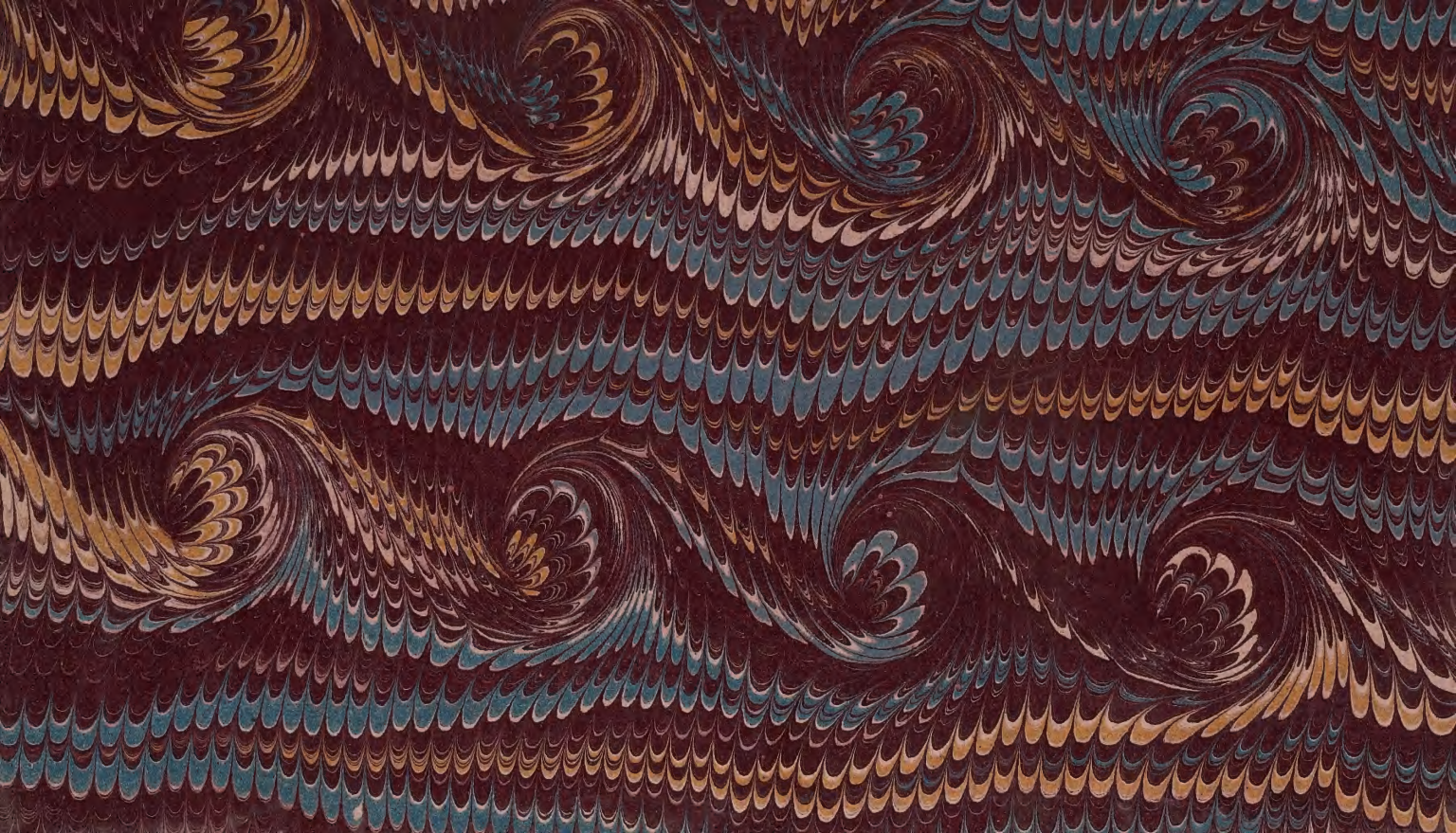

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